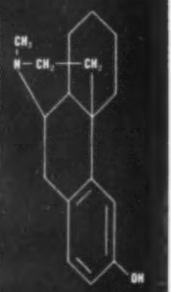
Medical TIMES

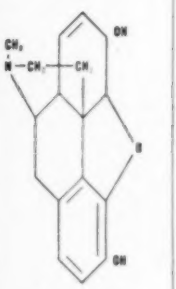
THE JOURNAL OF [illegible]

VOL. 80 SEPTEMBER 1952 NO. 9

a new synthetic narcotic

for longer-lasting pain relief





SIDE EFFECTS	DROMORAN	MORPHINE *Dose 15 mg (1/4 gr) Pain Relief 4 to 6 hrs
diminished urine	rare	frequent
constipation	rare	frequent
disorientation	rare	frequent
depressed appetite	rare	frequent
nausea	less	occasional
vomiting	less	occasional

Comparison of Dromoran and Morphine

Caution: Dromoran is a narcotic analgesic. It has addiction liability equal to morphine and for this reason the same precautions should be taken in administering the drug as with morphine.

DROMORAN®—brand of methorphinan (dl-3-hydroxy-N-methylmorphinan)

*Average dose

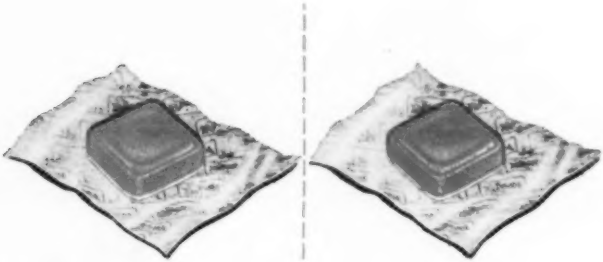
DROMORAN

(dl) Hydrobromide

'ROCHE'

HOFFMANN-LA ROCHE INC. • ROCHE PARK • NUTLEY 10 • NEW JERSEY

whenever you prescribe amphetamine



In **ADJUDETS** the physician has at his command a valuable new dosage form of amphetamine.

ADJUDETS *are handy*. They can be taken anywhere, any time, without water; they are welcome because they look and taste like a pleasant candy troche.

ADJUDETS *provide dextro-amphetamine*. This means smooth, sure action, with remarkable freedom from undesired side effects that often accompany amphetamine therapy. They also supply essential vitamins to help protect the patient against vitamin deficiency.

ADJUDETS are valuable in management of: overweight, mild depression, alcoholism, narcolepsy, postencephalitic parkinsonism, children's behavior problems, enuresis, etc.

ADJUDETS*

d-amphetamine-multivitamin troches, Wyeth

Wyeth

amphetamine and essential vitamins

in pleasant-to-take candy troche form

*Trademark

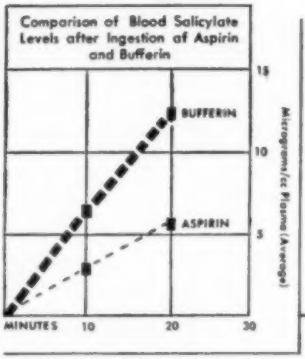
CONTENTS

Medical Times is published monthly by Romaine Pierson Publishers, Inc., with publication offices at 34 North Crystal Street, East Stroudsburg, Pa. Executive, advertising and editorial offices at 676 Northern Boulevard, Great Neck, L. I., N. Y. Acceptance under section 34.64, P.L. and R., authorized February 23, 1950 at East Stroudsburg, Pa.

Faster Pain Relief with BUFFERIN

1 ACTS TWICE AS FAST AS ASPIRIN

The antacids in Bufferin speed its pain-relieving ingredients through the stomach and into the blood stream. Actual chemical determinations show that within ten minutes after Bufferin is ingested blood salicylate levels are higher than those attained by aspirin in twice this time.[1]



2 DOES NOT UPSET THE STOMACH

Bufferin's antacid ingredients protect the stomach against aspirin irritation. This has been clinically demonstrated on hundreds of patients.

in usual doses

In a series of 238 cases, 22 had a history of gastric distress due to aspirin but only one reported any distress after taking 2 Bufferin tablets (equivalent to 10 grains of aspirin).[2]

in large doses

In a recent study group, 1006 patients received, over a 24 hour period, 12 Bufferin tablets (equivalent to 60 grains of aspirin). Although 72 had a history of being sensitive to aspirin, only 18 reported any gastric side-effect with Bufferin.[2]

1. Effect of Buffering Agents on Absorption of Acetylsalicylic Acid. J. Am. Pharm. Assoc., Sc. Ed. 39:21, Jan. 1950
2. Gastric Tolerance for Aspirin and Buffered Aspirin. Ind. Med. 20:480, Oct. 1951

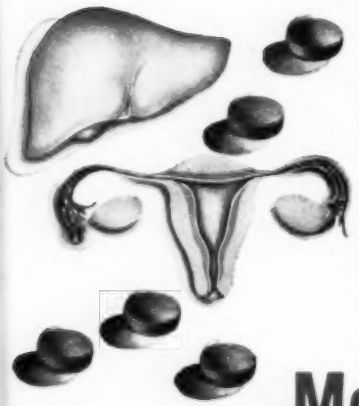
INDICATIONS: Simple headaches, neuralgias, dysmenorrhea, muscular aches and pains, discomfort of colds and minor injuries. Particularly useful when gastric hyperacidity is a complication. Useful for relieving pain in the treatment of arthritis.

EACH BUFFERIN TABLET contains 5 grains of acetylsalicylic acid, together with optimum amounts of the antacids aluminum glycinate and magnesium carbonate.

AVAILABLE in vials of 12 and 36 tablets and in bottles of 100. Tablets scored for divided dosage.

CONTENTS

the modern concept in menopausal therapy...



The *menopausal lipotropic*, MENOTROPE corrects the *interrelated* lipid and estrogenic imbalances of the menopause by providing a selected group of *interrelated* lipotropic agents esssential to liver function and the utilization of estrogens.

The liver is important in both lipid and estrogen metabolism. Estrogen levels influence lipid metabolism and liver function. Therapy with MENOTROPE is therefore directed against a common physiologic denominator of the disorders often seen in menopausal patients.

Metabolic reorganization with MENOTROPE, therefore, provides a fundamentally sound therapeutic basis for management of the menopause and its associated disorders.

indications

Menopausal symptoms unresponsive to routine estrogen therapy; diabetes or hepatogenic hyperglycemia at the menopause; serum lipid disturbances (abnormal phospholipid/cholesterol ratio) and fatty liver or atherosclerotic tendency associated with the menopause.

Menotrope tablets

menopausal lipotropic

relief through lipotropic-estrogen control

formula: Each tablet of MENOTROPE contains Choline Bitartrate 80.00 mg.; Estrotate (estradiol-3-trimethylacetate) 0.33 mg.; Folic Acid 0.46 mg.; Vitamin B_{12} U.S.P. 1.25 mcg.

dosage: One to three tablets daily.

packaging: Bottles of 100 tablets.

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MEDICAL BOOK NEWS

des

RECORDS *highest* FETAL SALVAGE

With **des** routine, Gitman and Kaplowitz[1] obtained 15 live births from 17 women with histories of one abortion — 88%.

And 3 live births from 3 women with histories of 3 abortions—100%—concluding that **des** is the "drug of choice" in these complications of pregnancy.

Ross[2], with similar **des** routine, brought all of 36 cases of threatened abortion successfully to term 100%. He concluded that "**des**, together with the recommended technique of its administration" is "the method of choice in the treatment of threatened abortion."

Karnaky[3] by the use of massive **des** dosage totalling 30 grams obtained living term infants from a woman who previously had six abortions — and a living infant by using 77 grams of **des** in a woman who had 13 previous abortions.

des 25 milligram tablets — highly micronized, triple crystallized diethylstilbestrol U.S.P. (Grant Process) — dissolve within a few seconds and are uniformly absorbed into the blood stream.

des 25 milligram tablets are available in containers of 30 and 100 tablets.

NOW AVAILABLE

NEW des potencies for massive dosage therapy.

des 50 mg. micronized diethylstilbestrol tablets

des 100 mg. micronized diethylstilbestrol tablets

REFERENCES:

1. Gitman, L., and Kaplowitz A.: Use of diethylstilbestrol in complications of pregnancy. New York State J. Med. 50:2823: 1950.
2. Ross, J.S.: Use of diethylstilbestrol in the treatment of threatened abortion. N. Nat. M.A. 43:20, 1951.
3. Karnaky, K.J.: Am. J. Obsts. & Gynec. 58,622. 1949.

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Medical TIMES

THE JOURNAL OF GENERAL PRACTICE

Incorporating the Long Island Medical Journal and Western Medical Times

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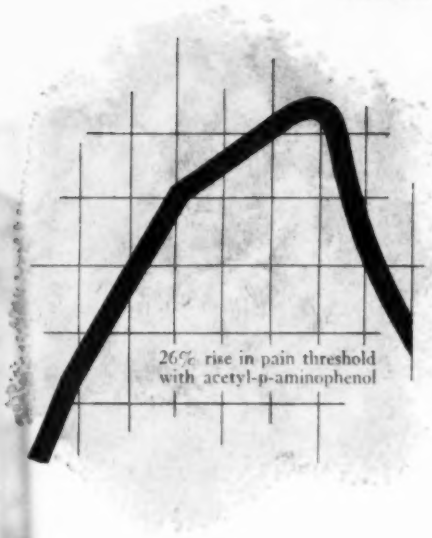
new, fast-acting analgesic containing acetyl-p-aminophenol



Because of its content of acetyl-p-aminophenol, Trigesic quickly raises the pain threshold and provides rapid, sustained relief of pain. A definite rise in pain threshold occurs within 30 minutes and analgesia is maintained for about 4 hours. Trigesic is for relief of pain in common colds, grippe, dysmenorrhea, premenstrual tension, sciatica, simple headache, after dental extractions and minor surgery, rheumatism, migraine, sinusitis, bursitis, myositis and pains of neuropathic origin.

Trigesic, *per tablet:*

0.125 Gm. (2 gr.) acetyl-p-aminophenol, 0.23 Gm. (3½ gr.) aspirin, 0.03 Gm. (½ gr.) caffeine. Bottles of 100 and 1,000 white, scored tablets on prescription only.

Trigesic with Codeine, *per tablet:*

16 mg. (¼ gr.) or 32 mg. (½ gr.) codeine phosphate in addition to the other ingredients. Bottles of 100 and 1,000 pink, scored tablets on prescription only.

TRIGESIC

Squibb Analgesic Compound

SQUIBB

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"Editorials printed in MEDICAL TIMES are always masterpieces. The writer knows the truth and knows how to express it in words—especially in those editorials, 'Phantom Surgery' and 'General Practitioners Need No Apology.'

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L. G. Lottenberg, M.D.
Brooklyn, N. Y.

—Concluded on page 28a

Must the patient choose between obesity and hunger?

Modern methods of obesity therapy do not force a choice between obesity and hunger. "People who become grossly obese . . . are just as truly food addicts as others are morphine addicts or alcohol addicts."[1]

AM PLUS is designed to protect the obese patient against his own food addiction.

The dextro-Amphetamine Sulfate in AM PLUS reduces the appetite to the level of the restricted diet and counteracts depression caused by the withdrawal of an overabundance of food.

The 8 Vitamins and 11 Minerals and Trace Elements in AM PLUS control the abnormal craving or inner hunger caused by the lack of one or more specific nutrients.

1. Strang, J. M.: Comments on Some Problems of Obesity, Currents in Nutrition, (New York: National Vitamin Foundation, Inc.) June, 1950, Nutrition Symposium Series No. 2, p. 127.

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CALCIUM	242 mg.
COBALT	0.1 mg.
COPPER	1 mg.
IODINE	0.15 mg.
IRON	3.33 mg.
MANGANESE	0.33 mg.
MOLYBDENUM	0.2 mg.
MAGNESIUM	2 mg.
PHOSPHORUS	187 mg.
POTASSIUM	1.7 mg.
ZINC	0.4 mg.
VITAMIN A	5,000 U. S. P. Units
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THIAMINE HYDROCHLORIDE	2 mg.
RIBOFLAVIN	2 mg.
PYRIDOXINE HYDROCHLORIDE	0.5 mg.
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For sound obesity management,

AM PLUS

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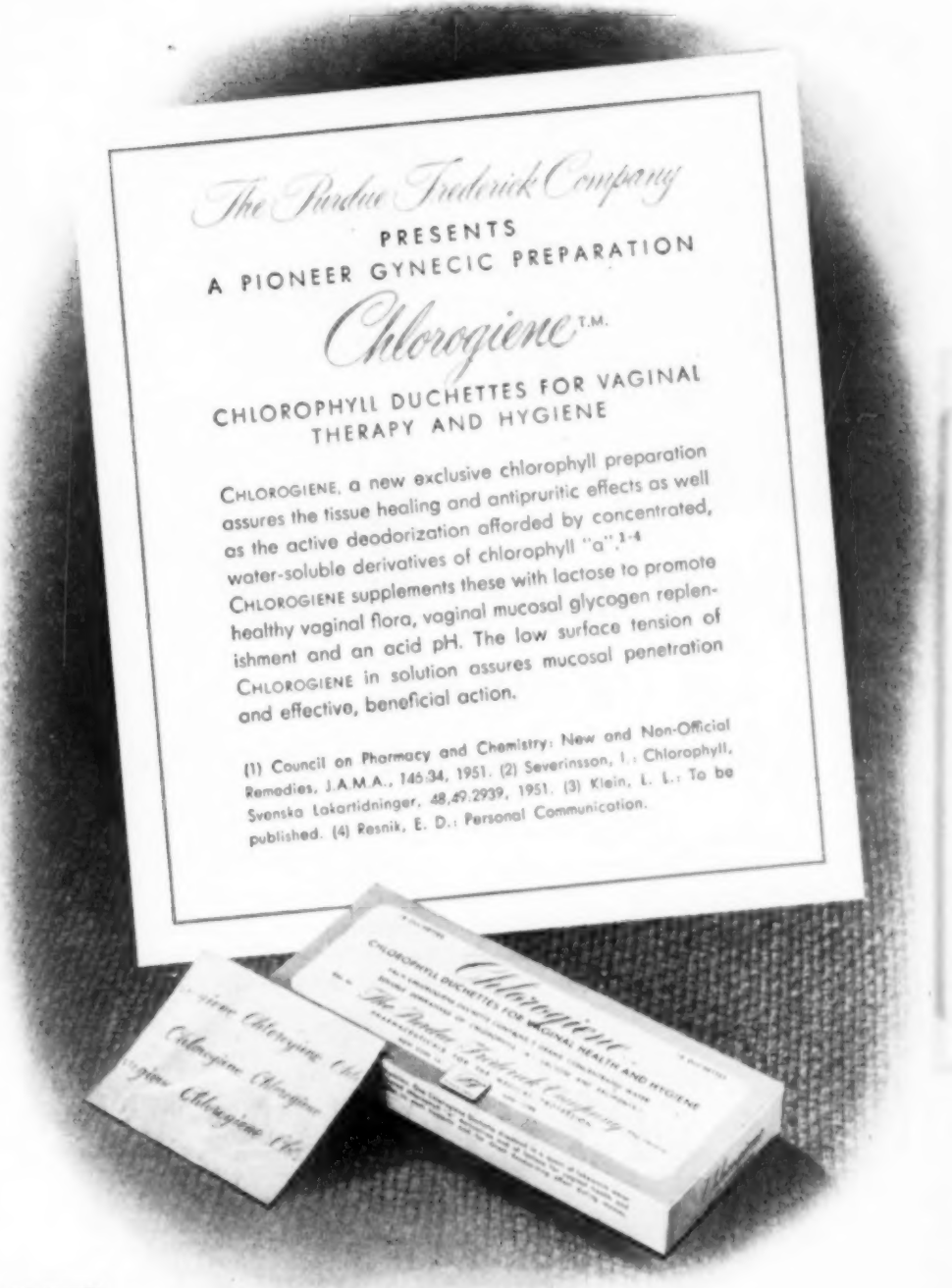
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CHLOROPHYLL DUCHETTES FOR VAGINAL THERAPY AND HYGIENE
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(1) Council on Pharmacy and Chemistry: New and Non-Official Remedies, J.A.M.A., 145:34, 1951. (2) Severinsson, I.: Chlorophyll, Svenska Lakartidninger, 48,49:2939, 1951. (3) Klein, L. L.: To be published. (4) Resnik, E. D.: Personal Communication.
Chlorogiene
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Two tablets of PYRIDIUM promptly and safely relieve the distressing urinary symptoms of patients suffering from cystitis, prostatitis, urethritis, and pyelonephritis.

Since PYRIDIUM is compatible with dihydrostreptomycin, penicillin, and the sulfonamides, or other specific therapy, it may be administered concomitantly to provide the twofold therapeutic approach of symptomatic relief and corrective action.

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just (2) *drops of* ***Privine***™ .05%

for safe nasal decongestion

Ciba *Summit, N. J.*

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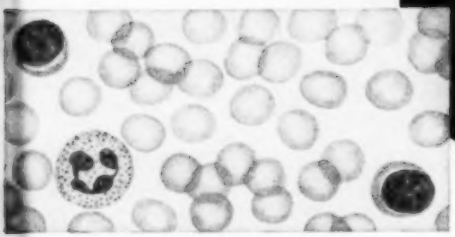
A FULL FORMULA



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FULL HEMATOLOGIC RESPONSE

Fuller CLINICAL RESPONSE

in a wide variety of anemias and nutritional deficiencies

A combination of antianemic factors produces a more rapid and greater rise in both hemoglobin and red blood cell count than iron alone.[1]

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1. Ruth, M. M.: *Med. Times*, 79:617, Oct., 1951.

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WHAT MAKES Biphetacel SUPERIOR?

Answer:

THE *EXCLUSIVE* 1:3 L/D RATIO!

"IN CURBING APPETITE and causing weight loss, a combination of Monobasic amphetamine phosphate containing a ratio of 1:3 of levo to dextro amphetamine (as found exclusively in Biphetacel) is more effective than the same amount of amphetamine contained in the racemic form where the ratio is 1:1 l/d . . ."*

Because of its exclusive 1:3 l/d ratio, Biphetacel curbs appetite more effectively, without nausea or nervousness, in both vagotonic or "sluggish" and sympathicotonic or "high strung" patients. In addition, it preserves an "enough-to-eat" feeling by decreasing gastric motility and prolonging emptying time of stomach, and assures normal elimination by supplying evenly distributed, non-nutritive, "no clump" bulk. Small dosage means low treatment cost.

Each Biphetacel tablet contains the preferred 1:3 l/d ratio as provided by Racemic Amphetamine Phosphate Monobasic 5 mg. and Dextro Amphetamine Phosphate Monobasic 5 mg.; Metropine® (methyl atropine nitrate, Strasenburgh) 1 mg., Sodium Carboxymethylcellulose 200 mg.

Dosage: 1 tablet ½ hour before meals, three times daily, for the vagotonic type. Increase this dose, if necessary, to achieve the desired clinical results. ½ tablet ½ hour before meals, three times daily, for one week for the sympathicotonic type. If no signs of intolerance develop, increase to 1 tablet. Supplied in bottles of 100 and 1000 scored tablets.

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*Freed, S. C. and Mizel, M.—*in press*

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Strasenburgh

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only

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1. Waters, E. G., and Wager, H. P.: Amer. J. Obstet. & Gyn. 60:885, 1950.

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PRANTAL* methylsulfate (diphenmethanil methylsulfate) is an effective anticholinergic agent for treatment of peptic ulcer. Pain, pyrosis, nausea, and other symptoms of this syndrome are rapidly relieved. Troublesome side effects seldom occur.

*T. M. Tablets 100 mg. q. 6 h.

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PRANTAL
methylsulfate

PRANTAL

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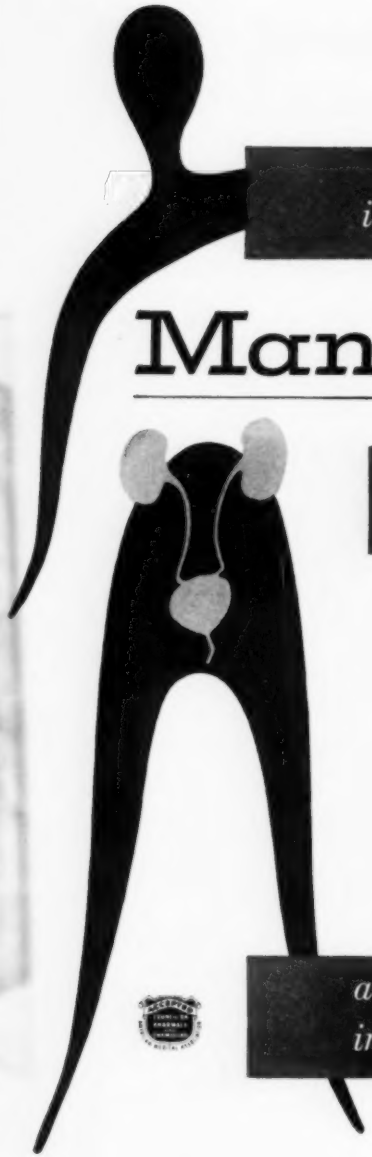

in urinary infections

Mandelamine®

persistently effective . . . well-tolerated

Mandelamine provides broad therapeutic activity in all the common urinary infections. This activity is often retained even against organisms which have become resistant to other antibacterial agents.

Mandelamine, in contradistinction to many other antibacterial agents, demonstrates a remarkable lack of toxicity as might be manifested by gastric upset, skin rashes or monilial overgrowth. Agranulocytosis and other blood dyscrasias have not been reported.

Mandelamine has the added advantages of being easy to administer and being economical for the patient.

a therapy of choice in urinary antisepsis

Mandelamine is often preferred in the management of pyelitis, cystitis, pyelonephritis, nonspecific urethritis, prostatitis, and infections associated with neurogenic bladder and urinary calculi, as well as for preoperative and postoperative prophylaxis in urologic surgery.

Supplied: Enteric-coated tablets containing 0.25 Gm. (3¾ gr.) methenamine mandelate – bottles of 120, 500 and 1,000.

Dosage: Adults, 3 or 4 tablets t.i.d.; children, in proportion.

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76.6% of patients preferred

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for relief of pruritus

In a recent study[1] of 200 cases of itching dermatoses, 76.6% of all patients who had had previous experience with other antipruritics expressed a preference for EURAX Cream.

In this study, as in previous reports[2-5], EURAX Cream produced complete relief of itching in approximately 65 per cent of cases, and partial relief in most of the remainder.

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- ✓ ***No loss of effect on continued use.***
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Bibliography

1. Hitch, J. M.: North Carolina M. J. *12*:548, 1951.
2. Peck, S. M., and Michelfelder, T. J.: New York State J. Med. *50*:1934, 1950.
3. Couperus, M.: J. Invest. Dermat. *13*:35, 1949.
4. Soifer, A.: Quart. Rev. Int. Med. & Dermat. *8*:1, 1951.
5. Johnson, S. M., and Bringe, J. W.: Arch. Dermat. & Syph. *63*:768, 1951.

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positive protection

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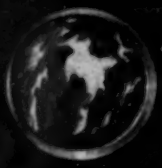
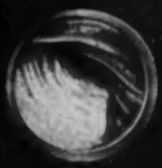


ANTACIDS ALONE

Streaking and clumping; inadequate protection.



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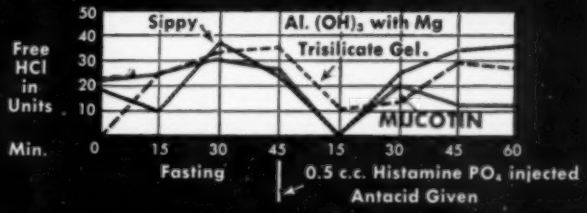

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Antacids plus purified gastric mucin, protects the mucosa from acid and pepsin activity without any undesirable side effects. MUCOTIN, THE ONLY MUCIN ANTACID, provides prompt relief of symptoms, promotes rapid healing and helps prevent recurrences.

SUGGESTED DOSAGE: 2 tablets every 2 hours. Tablets should be well chewed and no fluids taken for one-half hour.

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LETTERS TO THE EDITOR

—Concluded from page 14a

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J. D. B., M.D.
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physiologic correction for corpus luteum failure

PROLUTON PRANONE

Whether a deficiency of corpus luteum hormone presents as spontaneous abortion, metrorrhagia, functional dysmenorrhea, or premenstrual tension, it may be corrected *physiologically* by PROLUTON and PRANONE. PROLUTON (pure progesterone) is administered intramuscularly or as Buccal Tablets. PRANONE (ethisterone) is administered as tablets. Both PROLUTON and PRANONE aid development of a normal endometrium essential for uninterrupted pregnancy and normal menses.

PROLUTON ® (Progesterone U.S.P.) in oil for intramuscular injection.
PROLUTON Buccal Tablets (Progesterone U.S.P.) in Schering's special solid solvent base, POLYHYDROL.®
PRANONE ® Tablets (Ethisterone U.S.P.; anhydrohydroxyprogesterone), orally effective progestin.

PROLUTON-PRANONE

Schering CORPORATION • BLOOMFIELD, N. J.

antispasmin is the most potent of a large series of spasmolytic substances synthesized by Rosenmund and coworkers.[3] Outstandingly effective in the control of spasm associated with peptic ulcers, gastritis, colitis, cardiospasm, dysmenorrhea, and other conditions involving smooth muscle spasm.[2,4,5]

dosage usual adult dose, 1 to 3 tablets daily, taken after meals. In cardiospasm, administer *before* meals.

supplied white, scored tablets, containing 120 mg. *Antispasmin* Citrate, bottles of 100, 500, 1,000. Also available: tablets containing 120 mg. Antispasmin Citrate and 15 mg. Phenobarbital, bottles of 100, 500, 1,000.

1. Kulz, F. and Rosenmund, K.W., Klin. Wchnschr., *17*:344 (1938).
2. Weiss, S., Rev. Gastroenterol., *12*:436 (1945).
3. Kulz, F., Rosenmund, K.W., *et al.*, Ber. deut. chem. Gesellschaft, 72B: 19; 2161 (1939).
4. Lux, E., Klin. Wchnschr., *17*:346 (1938).
5. Ohr, A., Therapie d. Gegenwart, *80*:29 (1939).

Safer—yet 2 to 3 times more powerful than papaverine[1,2]

superior spasmolytic

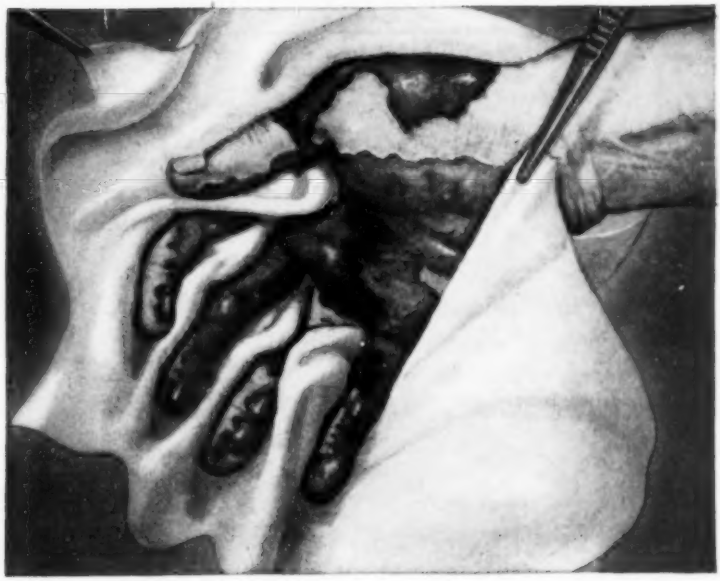
Antispasmin

(*N-ethyl-3,3' diphenyldipropylamine, Raymer*)

To relax smooth muscle spasm

RAYMER

PHARMACAL COMPANY
Pharmaceutical Manufacturers
Jasper and Willard Streets, Philadelphia 34, Pa.



New!

Davis & Geck **Aureomycin DRESSING**

An important advance in wound therapy

Aureomycin Dressing is an entirely new non-adherent dressing with antibiotic action having the following advantages:

1. *Broad-spectrum.* It concentrates locally the antibiotic now recognized as the most versatile yet discovered with a wider range of activity against both Gram-positive and Gram-negative micro-organisms than any other remedy.
2. *Prevents infection.* It suppresses growth of many organisms which might be present in the wound or later contaminate it.
3. *Non-adherent and non-macerating.* Minimizes abrasion of healing wounds and avoids trapping of moisture conducive to bacterial growth.
4. *Promotes healing.* When infection is controlled healing takes place faster.
5. *Non-toxic.* Reactions to Aureomycin Dressing so far have not been observed.

◀ *also new Aureomycin* **PACKING**

For use wherever plain or chemically impregnated packing was formerly used.

Available through D&G's surgical supply dealers

Davis & Geck, Inc.

Surgeons agree on D&G

Description:

Aureomycin Dressing **is an 8" x 12" gauze dressing of close mesh impregnated with 16 Gms. of 2% aureomycin hydrochloride ointment.**

Aureomycin Packing **is double selvage-edge gauze, in ½" x 24", 1" x 36" and 2" x 36" strips.**

In all cases of functional constipation, prompt and adequate bowel function followed by resumption of normal physiological bowel activity can be achieved with gentle-acting AGORAL* 'WARNER'.

Agoral* *'WARNER'*

for constipation

effective
gentle
corrective

AGORAL* provides three essentials for correction of acute or chronic constipation—*lubrication, gentle peristaltic stimulation*, and *unabsorbable bulk.*

With AGORAL*, there is no forcing, griping pains or anal seepage.

Effective, pleasant in taste, and readily miscible with foods and beverages, AGORAL* is the ideal laxative for young and old alike.

AGORAL* 'WARNER' is available in bottles of 6, 10, and 16 fluidounces.

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Division of Warner-Hudnut, Inc.
NEW YORK LOS ANGELES ST. LOUIS

*T. M. Reg. U. S. Pat. Off.

NEW *Pfizer Sterajject Syringe*

holds 2 cartridge sizes

sterile, single-dose

Sterajject*

disposable cartridges

Sterajject Penicillin G Procaine Crystalline in Aqueous Suspension (300,000 units)

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Sterajject Combiotic* Aqueous Suspension (400,000 units Penicillin G Procaine Crystalline, 0.5 Gm. Dihydrostreptomycin)

Sterajject Dihydrostreptomycin Sulfate Solution (1 gram)

Sterajject Streptomycin Sulfate Solution (1 gram)

2 cartridge sizes | *for only 1 syringe!*

two cartridge sizes permit *full standard* antibiotic dosage

cartridges individually labeled

ready for immediate use

no reconstitution

for full details, ask your Pfizer Professional Service Representative

Sterajject Cartridges: *each one supplied with sterile needle, foil-wrapped*

introduced by Pfizer *world's largest producer of antibiotics*

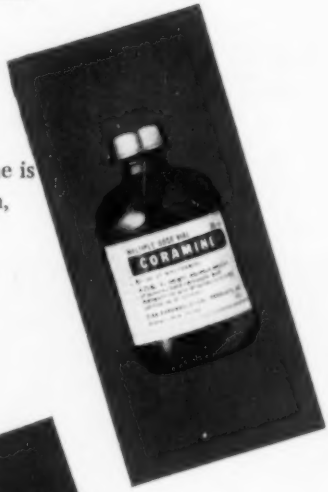
*TRADEMARK, CHAS. PFIZER & CO., INC.

ANTIBIOTIC DIVISION • CHAS. PFIZER & CO., INC. • BROOKLYN 6, N. Y.

selected for emergencies*

A recent nationwide survey[1] of the drugs carried in the doctor's bag reveals the vital significance of Coramine. As pointed out by Krantz:

"Coramine has proved its value over the years and certainly may be considered the drug of selection for acute central nervous system depression. It has largely replaced the less dependable caffeine sodium benzoate.... It should be mentioned that Coramine is gradually replacing picrotoxin in barbiturate intoxication, which lends further usefulness to this agent."[2]

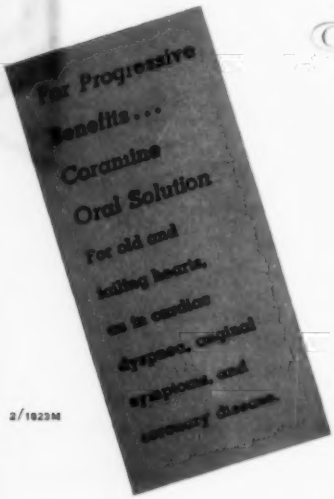


* *Respiratory and circulatory emergencies, barbiturate poisoning, acute alcoholism, asphyxia neonatorum*

Coramine®

dependable respiratory and circulatory stimulant

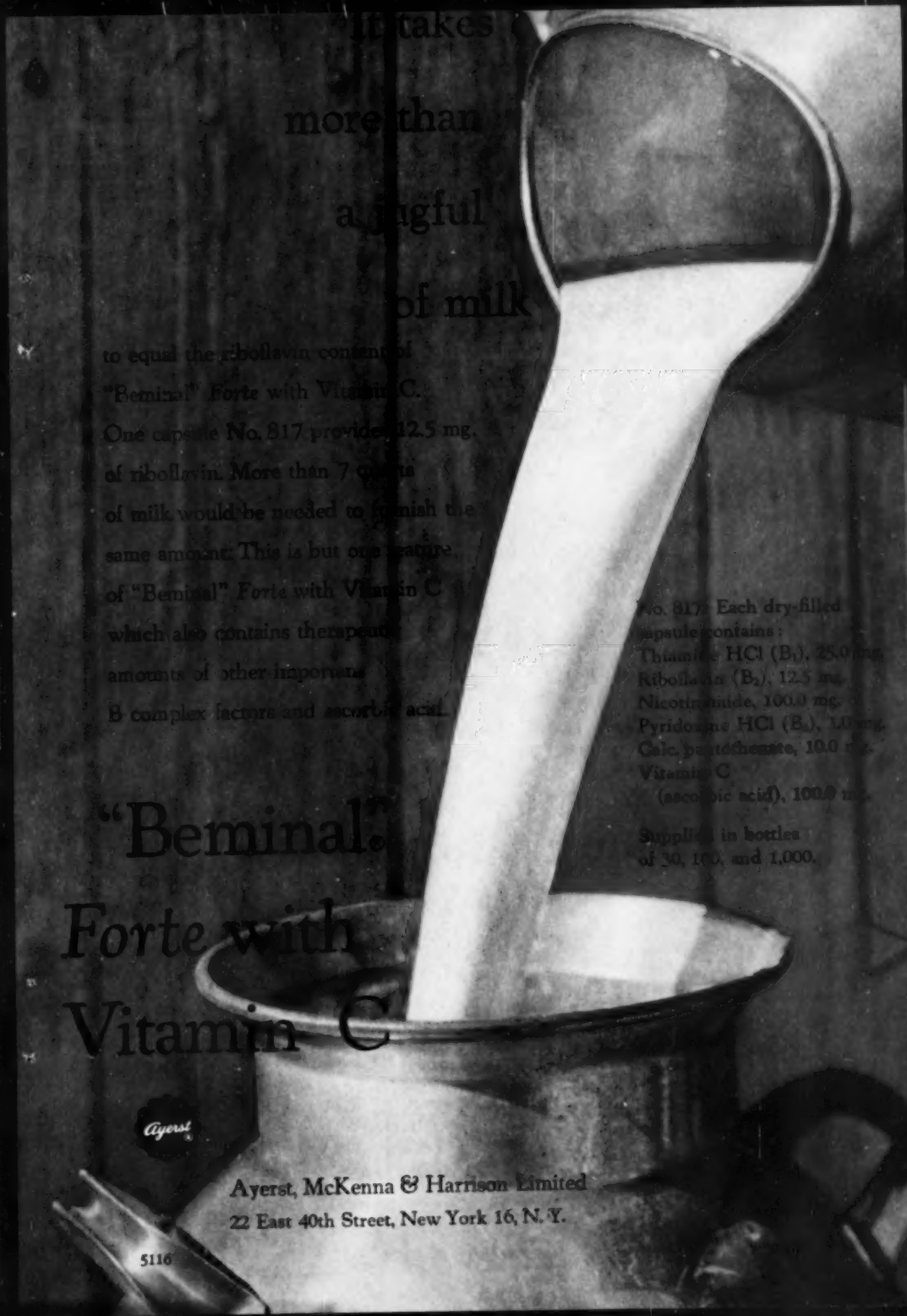
Ciba
Summit, N. J.



2/1923M

1. Matlin, E.: Current Med. Dig. 19:23, 1952. 2. Krantz, J. C., Jr.: Current Med. Dig. 19:27, 1952.

CORAMINE (brand of nikethamide) issued as a 25 per cent aqueous solution in ampuls 1.5 and 5 cc., multiple-dose vials 20 cc., and oral solution 30, 90, and 473 cc.


It takes
more than
a jugful
of milk
to equal the riboflavin content of
"Beminal" Forte with Vitamin C.
One capsule No. 817 provides 12.5 mg.
of riboflavin. More than 7 quarts
of milk would be needed to furnish the
same amount. This is but one feature
of "Beminal" Forte with Vitamin C
which also contains therapeutic
amounts of other important
B complex factors and ascorbic acid.
No. 817: Each dry-filled capsule contains:
Thiamine HCl (B1), 25.0 mg.
Riboflavin (B2), 12.5 mg.
Nicotinamide, 100.0 mg.
Pyridoxine HCl (B6), 1.0 mg.
Calc. pantothenate, 10.0 mg.
Vitamin C
(ascorbic acid), 100.0 mg.
Supplied in bottles
of 30, 100, and 1,000.
"Beminal"
Forte with
Vitamin C
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Ayerst, McKenna & Harrison Limited
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5116

Complete relief of symptoms was obtained by most menopausal patients, Perloff reported, and the greatest percentage of patients who "expressed clearcut preferences for any drug designated 'Premarin.'"

Perloff, W. H.: Am. J. Obst. & Gynec. **58**:684 (Oct.) 1949.

"PREMARIN"® in the menopause

Estrogenic Substances (water-soluble) also known as Conjugated Estrogens (equine). Tablets and liquid.

Highly effective • Well tolerated • Imparts a feeling of well-being

Ayerst, McKenna & Harrison Limited • New York, N. Y. • Montreal, Canada

5223

"...the universal disease of our times"[1]

anxiety

responds to

Gentle

SEDAMYL

[ACETYLBROM[illegible]ETHYL ACETYLCARB[illegible]MID] SCHENLEY

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ideal for daytime use

When patients need a cushion against the anxieties of the day, SEDAMYL® provides gentle, low-level sedation, without recourse to barbiturates.

SEDAMYL quickly overcomes anxiety and nervousness without causing drowsiness or impairing perception. Under its subtle yet distinct influence, the patient simply feels he is having one of his "good" days . . . and is thus enabled to carry on his usual activities with poise and efficiency.

1. Ebaugh, F. G.: Postgrad. Med. 4: 208, 1948.

SUPPLIED:
Tablets containing 0.26 Gm. (4 gr.), in tubes of 20's, bottles of 100's and 1000's

Professional literature and samples are available on your request

SCHENLEY LABORATORIES, INC.
LAWRENCEBURG, INDIANA

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OUTSTANDING RESIN PRODUCTS "National" PIONEERED

Literature and samples of Resion, Resinat, Resinat H-M-B and Natrinil available on request.

Resinat—U.S. Pat. No. 2,581,035

Philadelphia 44 Penna.

Removes intestinal toxins

RESION

A palatable suspension of multiple adsorbents

Effective in diarrhea of infants, children and adults

Controls the nausea and vomiting of pregnancy

Effective in bacterial gastrointestinal toxicity

Valuable adjuvant in the treatment of food poisoning, colitis and gastroenteritis

Available: Bottles of 4 and 12 fluidounces.

8 important advantages for ulcer therapy—

RESINAT H-M-B

Resinat	0.5 Gm.
Homatropine methylbromide	1 mg.

Quick relief of ulcer pain

Speeds healing of peptic ulcer

Attracts and binds both pepsin and hydrochloric acid

Blocks spasm: relaxes the gastrointestinal tract

Coats the crater with a protective film

Does not cause acid rebound, alkalosis, constipation or diarrhea

Does not remove chlorides, phosphates, minerals or vitamins

Pharmacologically inert

Available: Bottles of 36, 100 and 1,000 tablets.

Removes sodium—controls edema

NATRINIL

To reduce blood pressure in hypertension

To relieve edema in hypertension, congestive heart failure and cirrhosis

Controls sodium absorption with minimal dietary restrictions

Invites patient cooperation by allowing a more palatable diet

Lessens or eliminates the need for diuretics

Available: Powder, 10 ounce bottles and boxes of 24 individual 10 gram packets.

In G.I. infections—diarrhea—nausea of pregnancy

RESION

In peptic ulcer

RESINAT H-M-B

In hypertension, congestive heart failure and cirrhosis

NATRINIL

PLATO:
"PHILOSOPHY BEGINS IN WONDER"
—THEAETETUS, SEC. 155

JELLY WITH DIAPHRAGM *or* JELLY ALONE

DOCTOR... THE CHOICE MUST BE YOURS! The evidence of medical authority . . . stresses our sincere belief that postponement of pregnancy is a form of preventive medicine which is the responsibility of the physician. . . . Our own long experience in serving the medical profession has emphasized that the combination of diaphragm, used with either jelly or cream, is the ideal prescription. We have recognized, since 1925 however, that certain patient conditions must be left to the physician's diagnosis and be his obligation.... Whichever method you choose for the individual patient, you may depend upon the time-tested protective and spermicidal efficiency of Koromex products. For confident contraception... every time... prescribe Koromex.

ACTIVE INGREDIENTS: BORIC ACID 2.0% OXYQUINOLIN BENZOATE 0.02% AND PHENYLMERCURIC ACETATE 0.02% IN SUITABLE JELLY OR CREAM BASES

KOROMEX

A CHOICE OF PHYSICIANS

HOLLAND-RANTOS COMPANY, INC. • 145 HUDSON ST., NEW YORK 13
MERLE L. YOUNGS, PRESIDENT

In bacterial diarrheas:

- ✓ combats infection
- ✓ adsorbs bacteria, toxins, and irritants
- ✓ soothes and protects mucosa
- ✓ checks dehydration
- ✓ promotes development of formed, comfortably passed stools

Streptomagma provides
the essentials for securing
prompt and complete remission
. . . because Streptomagma contains:

1. Dihydrostreptomycin . . . "much more effective against the coliform fecal flora than the sulfonamides . . . not readily absorbable . . . non-irritating to the mucosa"[1]

2. Pectin . . . "various pectins . . . become bactericidal agents in the gastrointestinal tract when given together with streptomycin"[2]

3. Kaolin . . . for "tremendous surface and high adsorptive power"[3]

4. Alumina gel . . . itself a potent adsorbent, acts as a suspending agent for the kaolin and enhances its action, soothes and protects the irritated intestinal mucosa.

STREPTOMAGMA*

DIHYDROSTREPTOMYCIN SULFATE AND PECTIN WITH KAOLIN IN ALUMINA GEL

Supplied: Bottles of 3 fl. oz.

1. Pulaski, E. J. and Connell, J. F., Jr.: Bull. U.S. Army M. Dept. 9:265.
2. Wooldridge, W. E. and Mast, G. W.: Am. J. Surg. 78:881.
3. Swalm, W. A. M. Rec. *140*:26.

Wyeth

*Trademark

what are *you* doing about

DIABETES DETECTION?

This year's Diabetes Detection Drive will begin with Diabetes Week, November 16-22.

By joining, or helping to form, a Committee on Diabetes of your Medical Society, you can cooperate in the organized program to find unknown diabetics in your community.

As an individual practitioner, you can take an active – and essential–part in diabetes detection *all year round,* by making a test for urine-sugar routine for each and every patient

P.S. It is only too easy for a busy doctor to overlook testing himself and members of his family.

To screen for diabetes, the simplest method is testing for urine-sugar. A test is made of the first specimen voided one to three hours – preferably 90 minutes – after a full meal. Positive findings of glycosuria are checked by blood-sugar determinations.

During the Diabetes Detection Drive, *Clinitest* Reagent Tablets are available to your Medical Society without charge when requested from the American Diabetes Association. For information call or write the Secretary of your Society.

for urine-sugar

CLINITEST

BRAND • REG. U. S. PAT. OFF. REAGENT TABLETS

AMES

COMPANY, INC. AMES ELKHART, INDIANA

AMES COMPANY OF CANADA, LTD., TORONTO

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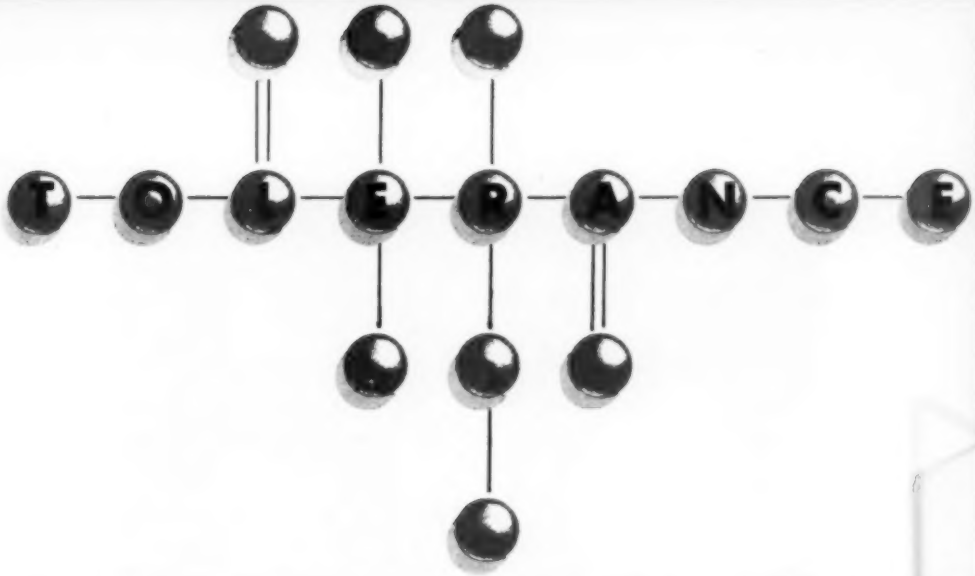

TOLERANCE is what makes

IROCINE

Safer Iron Therapy

Tolerance is "built in" Irocine by virtue of its unique content of the *new* organic molecule, Iron Sodium Malate.* Though it contains *25-108% more iron* per unit mass than other widely used iron compounds, Iron Sodium Malate renders Irocine therapy virtually free from disturbing side-effects. Gastric distress, constipation and diarrhea rarely occur under Irocine administration.

Effective Therapy, too

Potentiating factors in Irocine are Vitamin B_{12} (activity equivalent to 1 mcg.), *plus* copper sulfate U.S.P. (4 mg.), *plus* desiccated liver N.F. (200 mg.), *plus* Thiamine hydrochloride U.S.P. (0.17 mg.), *plus* Vitamin D (67 U.S.P. units).

REED & CARNRICK · Jersey City 6, N. J.

*Protected by U.S. Patent 2,503,781

A Trusted Name Since 1860

NO BORIC ACID!

Diaparene® CHLORIDE

(METHYL BENZETHONIUM CHLORIDE)

BACTERICIDAL • WATER-MISCIBLE • SAFE[2,3]

The ever-present possibility of boric acid poisoning by transcutaneous absorption, when the skin is broken, indicates the physician's and nurse's need of making sure to recommend to every mother a "diaper rash" dusting powder and ointment containing *no boric acid.*

1. Fisher, R. S. "Notes from The Office of the Chief Medical Examiner," Baltimore, Md., April, 1951.
2. Benson, R. A., et al.: "The Treatment of Ammonia Dermatitis with Diaparene," J. Ped. 34 1-49, Jan., 1949.
3. Niedelman, M. L., et al.: "Ammonia Dermatitis. Treatment with Diaparene Chloride Ointment," J. Ped. 37 5-762, Nov., 1950.

PHARMACEUTICAL DIVISION, HOMEMAKERS' PRODUCTS CORPORATION, NEW YORK 10

WHEN IS A LAXATIVE CONSTIPATING?

IN ADMINISTERING A LAXATIVE, the aim is to evacuate the residue in the colon, not to empty the entire contents of the intestinal tract, unless some emergency necessitates such drastic procedure. As so well stated by P. W. Brown[1] of the Mayo Clinic, violent purging "should be deplored," because "sweeping out of the bowel is unphysiologic" and "normal bowel movement cannot occur for perhaps two or more days after such an insult."

A noteworthy advantage of phenolphthalein is that its principal action is on the colon. Here it exerts a gentle stimulation that persists, in a gradually decreasing degree, to "soften and regulate the stools for several days, with little or no colic."[2] The colon is not left without further aid after the initial action.

Phenolphthalein has not been outdated by the desire for novelty, a basic human characteristic that has "seduced" the medical profession into forgetting the value of some of the remedies that have served well the cause of therapy, to refer to an editorial opinion.[3] Whatever erroneous impressions may have arisen in the past concerning the properties of phenolphthalein, have now been disproved by pharmacological research and clinical study in recent years.

That there is no irritation of the kidney, has been conclusively shown by urinalyses after the administration of a thousand doses of phenolphthalein, reported by Fantus and Dyniewicz.[4] On the contrary, they have found that in a series of hospital patients "those cases that presented albuminuria before the taking of phenolphthalein . . . the urinary condition improved after the dose, as indicated by the reduction in the amount of albumin in the urine and the disappearance of the albumin reaction in a number of cases."

After biological standardization for uniform efficiency, Ex-Lax presents phenolphthalein in an unusually palatable form. In the chocolated base of Ex-Lax, phenolphthalein is incorporated by a special process that assures thorough and even distribution. Fractional parts of a tablet of Ex-Lax always contain a proportionate dose of the laxative ingredient.

The gentle, effective stimulation of the colon, that persists after the initial action, emphasizes the usefulness of Ex-Lax in the relief of temporary constipation and in the more prolonged treatment of habitual constipation. This continued effect assists the colon and rectum in recovering their spontaneous action necessary for normal functioning.

The advantages of Ex-Lax as an effective, palatable laxative, that is easy to use at all ages, are recognized by the many physicians, who use it in their practice.

A trial supply of Ex-Lax, and literature concerning its laxative ingredient, will be gladly sent to physicians.

Ex-Lax, Inc., Brooklyn 17, New York

1. P. W. Brown: Current Therapy, 1950. Saunders, page 203.
2. T. Sollmann: A Manual of Pharmacology. Saunders, 1948; page 177.
3. G. Blumer: Cur. Med. Dig. 19:53, April, 1952.
4. B. Fantus and J. M. Dyniewicz: J.A.M.A. 108: 439, Feb. 6, 1937.

You can depend on Hepvisc to reduce readings to safer levels, as well as to bring your patients gratifying relief from the subjective symptoms.

HEPVISC

AN EFFECTIVE HYPOTENSIVE

For prompt results, smooth and lasting reduction in blood-pressure. Accompanying hypertensive symptoms also respond to this medication.

HEPVISC induces a gradual and sustained lowering of blood-pressure—affords relief of hypertensive headache, dizziness and tinnitus in over 80% of cases.

The formula of HEPVISC combines 8 mg. hexanitrate of mannitol plus 50 mg. viscum album extract. The average dose is 2 tablets, repeated at intervals of four to six hours according to the blood pressure. Supplied in bottles of 50-500-1000 tablets.

Prescribe HEPVISC Tablets. Both you and your hypertensive patients will be gratified with the results.

Samples and Literature to Physicians on Request

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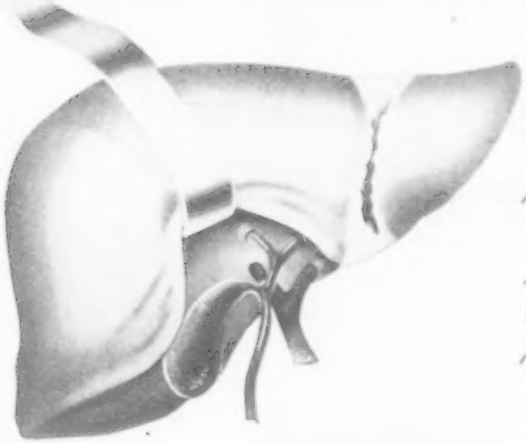


to restore

normal

fat

metabolism

HEPA-DESICOL®

Kapseals®

combined lipotropic and bile therapy

HEPA-DESICOL combines choline, methionine, and inositol with Desicol (desiccated whole fresh bile, Parke-Davis). It is valuable in the treatment of liver dysfunction often accompanying early cirrhosis, alcoholism, diabetes mellitus, malnutrition, obesity, and atherosclerosis.

Lipotropic action of choline, methionine, and inositol is well established; Desicol not only provides additional bile but also stimulates normal bile flow. This dual action of HEPA-DESICOL provides more effective therapy of disturbed fat metabolism.

HEPA-DESICOL Kapseals are supplied in bottles of 100 and 1000.

each Kapseal contains:

dl-Methionine	150 mg.
Choline Bitartrate	200 mg.
Inositol	50 mg.
Desicol®	150 mg.

dosage— Two to four Kapseals three times a day, with or immediately following meals.

MEDICAMENTA VERA

Parke, Davis + Company

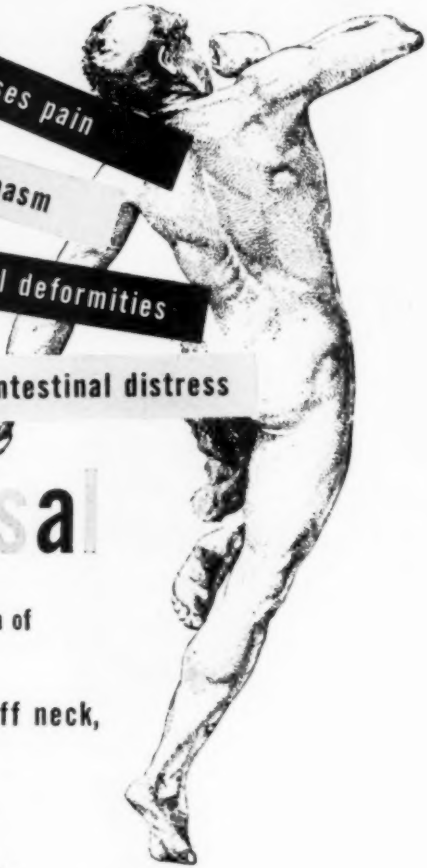
DETROIT, MICHIGAN

In **Rheumatic** conditions

relieves muscle-spasm which causes pain

relieves pain which causes spasm

helps minimize disabling postural deformities



controls concomitant gastro-intestinal distress

Mephosal

A **new** whole-patient approach to the problem of pain — spasm — more pain in

low back pain, sciatica, arthritis, stiff neck, night cramps, sacroiliac distress and other common rheumatic disorders

MEPHOSAL—ELIXIR (new) and TABLETS—contains

	each tablet	each teaspoonful (4 cc.) elixir
Mephenesin—modern, safe, non-toxic, effective skeletal-muscle antispasmodic	125 mg.	400 mg.
Sodium Salicylate—specific for rheumatic pain	125 mg.	400 mg.
Homatropine Methylbromide—safest and most efficient gastro-intestinal antispasmodic to control concomitant g.i. distress.	1.25 mg.	2.5 mg.

Average Dose: 2 or 3 tablets or one teaspoonful elixir every 3 or 4 hours. Supplied in bottles of 50, 100 and 500 tablets. Elixir, 8 oz. and 1 pint.

Samples and detailed literature to the profession on request.

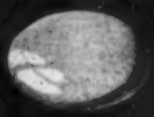
Crookes

CROOKES LABORATORIES, INC.

MINEOLA, N. Y.

new convenience in broad-spectrum therapy

Introducing new flexibility in broad-spectrum antibiotic therapy with the most familiar and acceptable form of medication for your patients—well-tolerated, rapidly-effective Crystalline Terramycin Amphoteric Tablets (sugar coated) are prepared from the pure, natural antibiotic substance, assuring availability throughout the pH range of the gastrointestinal tract. Will not contribute to gastric acidity.



Terramycin SUGAR-COATED tablets

Supplied: 250 mg. tablets, bottles of 16 and 100; 100 mg. and 50 mg. tablets, bottles of 25 and 100.

world's largest producer of antibiotics

Pfizer

ANTIBIOTIC DIVISION, CHAS. PFIZER & CO., INC., BROOKLYN 6, N. Y.

TERRAMYCIN
PENICILLIN
STREPTOMYCIN
DIHYDROSTREPTOMYCIN
COMBIOTIC
BACITRACIN
POLYMYXIN

MODERN MEDICINALS

These brief resumes of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Benemid Probenecid, Sharp & Dohme, Inc., Philadelphia, Pa. Designed to create a favorable balance between production and excretion of uric acid in the treatment of gout. **Dose:** One tablet daily for 1 week, followed by 2 Benemid tablets (1.0 Gm.) daily in divided doses. Dosage should be controlled by physician. **Sup:** In bottles of 100 tablets (0.5 Gm.).

Bidrolin, Armour Laboratories, Inc., Chicago 11, Ill. In the management of indigestion, constipation and flatulence of biliary origin, in biliary stasis, in maintaining drainage after gallbladder surgery and in non-calculous cholangitis and cholecystitis when the gallbladder is still able to expand; is contraindicated in obstructions of the hepatic or common duct and in severe hepatitis. **Dose:** Two tablets after meals 2 or 3 times daily. **Sup:** In bottles of 100 tablets.

Cebetinic, Upjohn Co., Kalamazoo, Mich. Vitamin B12 activity increased to 5 mcg. Hematinic with vitamin supplement. **Dose:** Adults, 3 or more tablets daily; children, 1 to 3 tablets daily. **Sup:** In bottles of 60 and 500 tablets.

Depo-Testosterone, Cyclopentylpropionate Sterile Solution, The Upjohn Co., Kalamazoo 99, Mich. Used as replacement therapy in hypogonadism, male climacteric, cryptorchidism and testicular hypofunction. In the female it is used in the treatment of functional uterine bleeding, dysmenorrhea, premenstrual tension, menopausal syndrome, control of lactation and is being investigated for use in carcinoma of the breast. Also used in building body protetin during convalescence and devilitating diseases. **Dose:** as determined by physician. One intramuscular injection usually maintains the androgenic effect for 2 weeks or longer. **Sup:** In 10 cc. vials of 50 mg. per cc. and 100 mg. per cc.

Dilantin Infatabs, Parke, Davis & Co., Detroit 32, Mich. Anticonvulsant for pediatric use. **Dose:** One-half to 1 tab. 2 to 4 times daily. **Sup:** In bottles of 100 tablets.

Ferro-Calfate, Wm. S. Merrell Co., Cincinnati, Ohio. Dietary supplement in pregnancy and lactation; dietary calcium and phosphorus deficiencies; during periods of rapid growth; nutritional iron-deficiency anemia, and ostemalacia. **Dose:** As determined by physician. **Sup:** In bottles of 100 and 1,000 capsules.

Hp Acthar Gel, Armour Laboratories, Chicago 11, Ill. ACTH therapy for both intramuscular and subcutaneous use. **Dose:** As determined by physician. **Sup:** In 5 cc. vials, 20 or 40 units per cc. and in 1 cc. disposable cartridge syringes of 20 or 40 units per cc.

Hyazyme, Abbott Laboratories, North Chicago, Ill. Hyaluronidase, enzyme which accelerates the diffusion and absorption of subcutaneously injected fluids and drugs. **Dose:** As administered by physician. **Sup:** As a lyophilized powder in 1 cc. vials.

Isoniazid Panray, Panray Corp., New York 13, N. Y. Anti-tubercular drug. **Dose:** As determined by physician. **Sup:** in tablets of 50 mg.

Methanabol, Jackson-Mitchell Pharmaceuticals, Inc., Culver City, Calif. For the treatment of retarded growth, in constitutional diseases accompanied by protein westage and in certain endocrine deficiencies. **Dose:** As determined by pnysician. **Sup:** In bottles of 50 tablets.

Mytinic Liquid, Bristol Labs., Inc., Syracuse, N. Y. New formula, oral hematinic. **Dose:** As determined by physician. **Sup:** In bottles of 8 oz., 12 oz. and 1 gal.

—Concluded on page 58a

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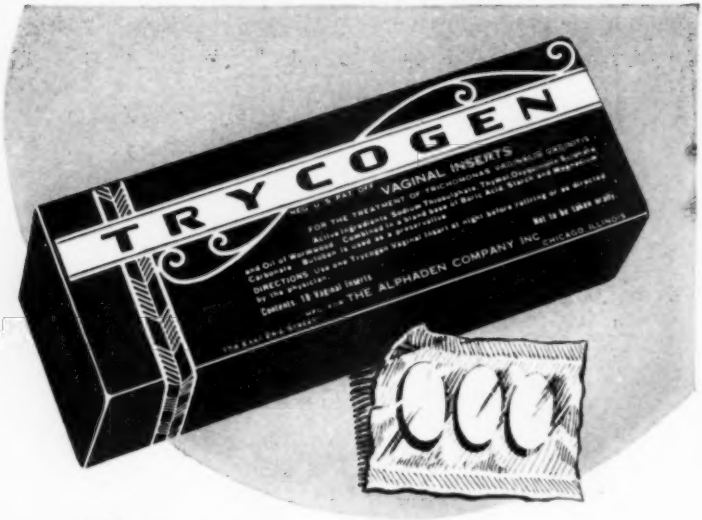

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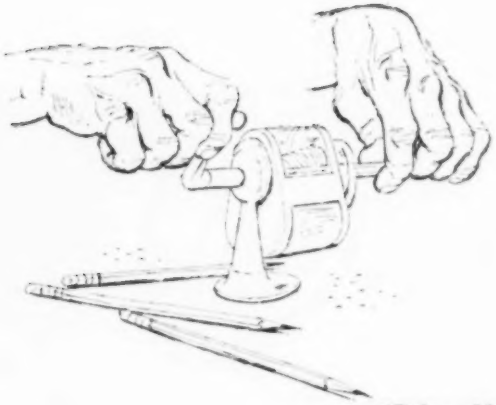

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1. Covalt, N. K.: Completed Medicine—Rehabilitation, J.A.M. Women's A., 7:9 (Jan.) 1952, pp. 10, 12.

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1. Fremont, R. E.; Rimmerman, A. B., and Shaftel, H. E.: Postgrad. Med. *10*:216, 1951.
2. Rimmerman, A. B., et al: Am. Pract. & Digest Treat. *2*:168, 1951.

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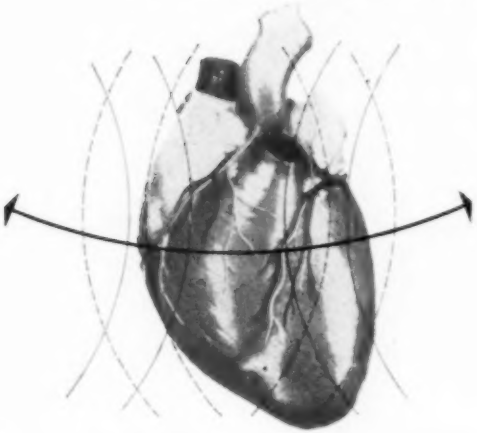

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—Concluded from page 50a

Nydrazid, E. R. Squibb & Sons, New York 22, N. Y. Anti-tubercular drug. **Dose:** Orally, as determined by physician. **Sup:** In bottles of 100 tablets of 100 mg.

Pluravit, Winthrop-Stearns, Inc., New York 18, N. Y. For prophylaxis against multiple vitamin deficiency, now has vitamin B-12 and folic acid added to former ingredients. **Dose:** As determined by physician. **Sup:** In bottles of 15 cc. and in bottles of 30, 100 and 1,000 pellets.

Pluraxin, Winthrop-Stearns, Inc., New York 18, N. Y. Multiple vitamin preparation for nutritional preoperative preparation, alcoholics, convalescents, patients on restricted diets, now has vitamin B-12 and folic acid added to former ingredients. **Dose:** Two capsules daily for 1 week or 10 days, and 1 capsule daily thereafter. **Sup:** In bottles of 30, 100 and 1,000 capsules.

Prantal Methylsulfate Injection, Schering Corp., Bloomfield, N. J. Anticholinergic agent, in peptic ulcer and other acute conditions associated with hyperacidity or hypermotility of the stomach. **Dose:** Recommended dosage is 0.5 mg. Kg. 4 times daily or adjusted as necessary. **Sup:** In multiple dose vials of 10 cc. in boxes of 1 and 6.

Pyribenzamine Cream with Zirconium, Ciba Pharmaceutical Products Co., Summit, N. J. For treating poison ivy-oak-sumac dermatitis. **Dose:** As determined by physician. **Sup:** In 1 oz. tubes.

Pyrididin, Nepera Chemical Co., Inc., Yonkers, N. Y. Anti-tubercular drug. **Dose:** As determined by physician. **Sup:** In bottles of 100 and 1,000 tablets (50 mg.).

Rhulicream Lederle Laboratories, New York 20, N. Y. For treatment of poison ivy, insect bites, oak and sumac poisoning—prevents spreading of these infections. **Dose:** As determined by physician. **Sup:** In tubes of 1 oz.

Rubramin, E. R. Squibb & Sons, New York 22, N. Y. Now available in 10 cc. vials containing 100 micrograms of vitamin B-12 activity per cc. Active in producing a hematologic response in patients with pernicious anemia and certain other macrocytic anemias, effective in preventing or relieving subacute combined degeneration in persons with pernicious anemia. **Dose:** As determined by physician. **Sup:** Rubramin concentrate is available in both 5 and 10 cc. vials containing 30 micrograms per cc.; and in 10 cc. vials containing 50 and 100 micrograms per cc. Rubramin crystalline solution is available in 10 cc. vials with 30 micrograms per cc. Rubramin concentrate and Crystalline are also supplied in ampuls of 1 cc. containing 15 micrograms per cc.

Syncrobin, Schenley Laboratories, Inc., Lawrenceburg, Ind. Injectable form of penicillin-dihydrostreptomycin, two new dose forms, cutting in half amount of dihydrostreptomycin sulfate. **Dose:** As determined by physician. **Sup:** In single and five-dose vials.

Testosterone with Estrone, Ayerst, McKenna & Harrison, Ltd., New York 16, N. Y. Combined hormone therapy by the intramuscular route, in osteoporosis and fractures in both sexes, dysmenorrhea, painful breast engorgement accompanying the suppression of lactation, the female and male climacteric in certain selected cases, pituitary dwarfism in young girls, malnutrition in the female. **Dose:** As determined by physician. **Sup:** In 10 cc. vials in boxes of 6.

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Trilene, Ayerst, McKenna & Harrison, Ltd., New York, N. Y. Analgesic agent which can be self-administered. **Dose:** As determined by physician. Do not use in a closed circuit with soda lime. **Sup:** In containers of 300 cc.

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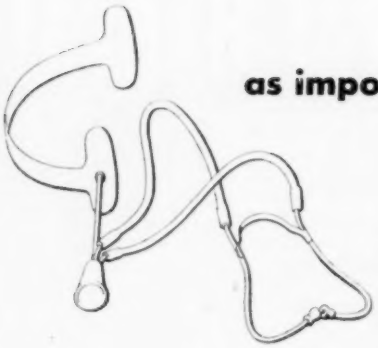

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1. Tompkins, W. T., cited by Allen, E. D.: The Increased Demands of the Maternal Organism by Pregnancy; Chicago M. Soc. Bull. 52:832 (Apr. 8) 1950, p. 833.
2. Simonnet, H.: Nutrition in Pregnancy; Canad. M. A. J. 58:556 (June) 1948.

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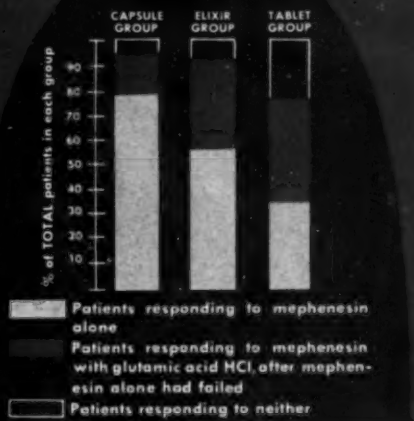

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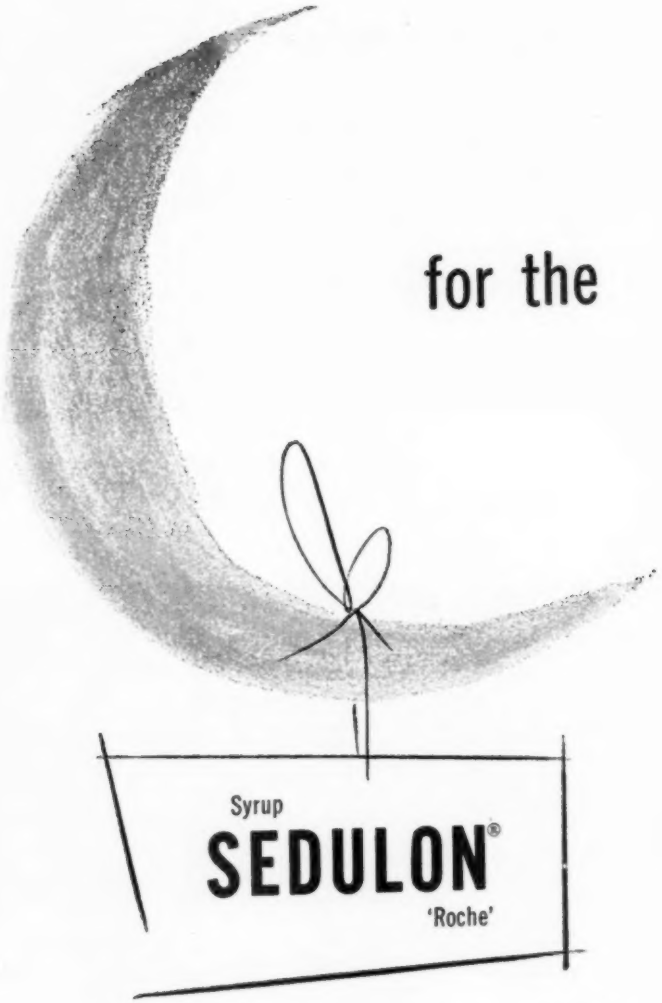

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Prostatic Cancer—Questions and Answers

ABEL J. LEADER, M.D., F.A.C.S.
Houston, Texas

Editor's Note

The topic of Prostatic Cancer is treated somewhat differently in this paper than in the usual conventional fashion. It is presented primarily for the general practitioner and strives to clear up a lot of fuzzy thinking on the subject by the succinct answers to questions usually asked by medical students and by practicing physicians not primarily interested in urology. In so doing excess verbiage has been eliminated and obscure points are readily clarified.

Q. What is the possibility that I will develop cancer of the prostate?

A. Forty men in every one hundred who have passed the age of sixty have developed some degree of prostatic obstruction. Of these forty men, eight will be found to have a prostatic cancer as the cause of the obstruction. The statistical incidence is therefore about 8% in all men past sixty, and about 20% in all men who have developed prostatic obstruction.

Q. Is cancer of the prostate curable?

A. It is necessary to distinguish between early carcinoma of the prostate and the advanced stages of the disease. Early cancer of the prostate is curable; in its advanced stages the prognosis is hopeless for cure.

Q. What do you mean by "early" cancer of the prostate?

A. It is that stage of growth in which the neoplastic process is *totally* confined within the substance of the prostate. It has not yet "broken through" the prostatic capsule. As such it is amenable to total extirpation as is any other localized tumor.

Q. Then advanced prostatic cancer is that which has already spread *outside* of the confines of the prostate?

A. Yes. Advanced prostatic carcinoma is that which by extension has come to involve the seminal vesicles, the base of the bladder, and very frequently the skeletal system. Total removal of the neoplasm is not possible and there is no hope of cure.

Q. What are the findings on rectal palpation of a late prostatic cancer?

A. Late carcinoma of the prostate offers no difficulties in diagnosis to the examining finger. The prostate itself is hard, asymmetrical, and may be nodular. Its borders are not well defined because of the neoplastic infiltration and the seminal vesicles surmounting the prostate may be indurated, irregular, and fixed. Normally the prostate may be moved to a slight degree from side to side and up and down. In late prostatic cancer this mobility is gone.

Q. What are the findings on rectal palpation of an early prostatic cancer?

A. Although one can depend on the rectal examining finger for the diagnosis of late prostatic cancer, the same cannot

be said when the disease is in its early stages. In such cases, only a *localized area of increased firmness* within the substance of the prostate may be palpated. Less commonly, a definite nodule is felt. It is apparent that making the diagnosis of early cancer requires considerable discrimination on the part of the examiner. Usually, the rectal findings serve to arouse the suspicions of the examiner that an early cancer is present.

Q. How are these suspicions confirmed or denied?

A. Exposure of the prostate by perineal incision and microscopic examination of both the frozen section and more permanent preparations obtained by biopsy of the suspicious area will provide confirmation or denial.

Q. Assuming that the tissue removed by biopsy shows cancer, what then?

A. Since the only way in which prostatic cancer can be cured is by its total extirpation, it follows logically that the radical removal of the prostate and the seminal vesicles is mandatory for cure. The latter are removed because they are first involved when the neoplasm has spread beyond the confines of the prostate. If subsequent histological examination of the seminal vesicles fails to show cancer, the chances that a cure will be achieved are enhanced.

Q. What is this surgical procedure called?

A. Radical perineal prostatectomy.

Q. If the biopsy sections fail to show malignant changes, what then?

A. If the patient had presented no urinary symptoms or findings indicating prostatic obstruction, the wound is closed. On the other hand, if the symptoms and findings indicate that there has been interference with the free outflow of urine from the bladder, usually as a result of prostatic hypertrophy, a simple perineal prostatectomy is done.

Q. What is the difference between a simple and a radical perineal prostatectomy?

A. In the former, only the obstructing tissue is removed. The seminal vesicles and the prostatic capsule are left behind. The obstructing adenoma is removed by enucleation through an incision in the capsule which is then closed. In the radical operation, the entire prostate *and the capsule* and the seminal vesicles are removed.

Q. Why is the removal of the prostatic capsule so important?

A. It is an established fact that about 75% of all prostatic cancers originate in the posterior lobe of the prostate. This lobe is a thin lamination overlying the posterior aspect of the bulkier lateral lobes of the prostate. It never enters into the process of prostatic hypertrophy. It is indistinguishably fused to the inner aspect of the posterior portion of the prostatic capsule and cannot be removed except as an intimate part of the capsule. For this reason, suprapubic prostatectomy, simple perineal or retropubic prostatectomy, and transurethral prostatic resection will not remove the site of origin of most prostatic cancers.

Q. I have read that a more recently developed operation called radical retropubic prostatectomy can also cure prostatic cancer. Is this true?

A. Yes. There is this disadvantage to the operation, however. In this operation, the prostate is approached by way of an abdominal incision which exposes the anterior surface of the prostate. Suspicious nodules are always palpated posteriorly and in this approach biopsy of these areas is not possible. When the surgeon sets out to perform radical retropubic prostatectomy, he is committed to the completion of that operation, even though subsequent

study of the operative specimen fails to reveal the presence of cancer. On the other hand, when the perineal approach is used, the surgeon is able to palpate the suspicious area directly, remove a piece of the questionable tissue for frozen section study, and may thereafter do one of three things. (1) In the case where there have been no obstructive urinary symptoms and the tissue report is negative for cancer, he need only close the wound. (2) When prostatic enlargement is present which has resulted in symptoms and the report is negative, the surgeon may go ahead with a simple perineal enucleation of the obstructing prostate. (3) With a tissue report positive for malignancy, he may then go ahead and perform radical perineal prostatectomy for cure.

Q. Has the operation of radical retropubic prostatectomy any special merit?

A. Yes. In about 6% of cases in which a diagnosis of benign prostatic hypertrophy has been made prior to operation, the surgeon discovers that he is dealing with an early carcinoma. In such cases, enucleation of the prostatic growth is difficult if not impossible because of the absence of the cleavage plane characteristic in benign hypertrophy. In such cases, the operation of radical retropubic prostatectomy has a unique degree of usefulness, for the operator may then accomplish the removal of the entire prostate and seminal vesicles, as in radical perineal prostatectomy.

Q. You seem to prefer the perineal approach for radical prostatectomy. Why?

A. In addition to the very real advantage of being able to confirm the diagnosis by frozen section study before continuing with the radical operation, I believe that the perineal approach allows for better exposure of the prostate and seminal vesicles, it allows a more careful reanastomosis of the bladder neck and urethral stump, it allows for dependent drainage of the wound area, and bleeding is more readily controlled.

Q. Do benign prostatic hypertrophy and carcinoma co-exist in the same prostate?

A. This is very frequently the case. The serious prognostic significance of the latter makes it the more important diagnosis and the hypertrophy is usually not mentioned.

Q. What are the symptoms of early prostatic cancer?

A. Unfortunately there are none. Such urinary symptoms as are present are not characteristic of the neoplasm but of varied pathological entities causing obstruction at the bladder neck and acting to interfere with the free outflow of urine from the bladder. Much too frequently there are no symptoms whatever. In consequence an examiner who feels a suspicious nodule may hesitate to suggest to the asymptomatic patient, who may be undergoing a routine physical examination, that perineal biopsy is indicated. Such evasion of responsibility jeopardizes the patient's chances for cure. I believe that a suspicious prostatic nodule in the asymptomatic patient as surely merits biopsy study as does the nodule in the asymptomatic female breast.

Q. How frequently does the urologist see what you have described as early cancer of the prostate?

A. In the experience of those urologists who perform radical perineal prostatectomy for the cure of cancer and who in consequence have a high index of suspicion, only one prostatic cancer in ten is sufficiently localized to justify surgical attempts at cure.

Q. This is an amazingly small percentage! How do you account for it?

A. There are a number of reasons: (1)

Since early prostatic cancer is usually asymptomatic, the patient with such a neoplasm is not seen by the physician. (2) The public has yet to be educated to the value of routine rectal examination by competent examiners at regular intervals for all men over fifty. (3) Rectal examination of the male is too frequently omitted by many otherwise competent physicians, although it is well known that this is truly one of the most informative parts of the physical examination. (4) The bleak but mistaken idea that *all* cancers of the prostate are incurable is entirely too prevalent among many physicians and some urologists. For these physicians there is no incentive for discriminating rectal diagnosis, and many of their patients who might be cured are denied the chance for cure.

Q. Is the clinical laboratory of any assistance in the diagnosis of early prostatic cancer?

A. Not at the present time. Papanicolaou-stained smears of exfoliated cells in prostatic secretions obtained by massage give only limited and equivocal help.

Q. Does the serum acid phosphatase determination help us in the diagnosis of early prostatic cancer?

A. No. The serum acid phosphatase is elevated only when the prostatic carcinoma has extended beyond the confines of the prostatic capsule. Hence its only value in diagnosis when abnormally elevated is to indicate the presence of advanced incurable prostatic cancer.

Q. Is the x-ray of any value in the diagnosis of prostatic cancer?

A. Only for advanced cases in which metastasis to bone has occurred, and then in a limited sense since in about 30% of cases metastasis to bone may be present but not demonstrable by x-ray. These are the so-called "occult bony metastases."

Q. Is the serum acid phosphatase elevated in every case of advanced prostatic cancer?

A. No. Tabulated statistics indicate that this is true in only 72% of cases.

Q. From what you have just said, it appears to be possible for a man to have advanced prostatic cancer with extensive bony metastases, and yet his bony skeleton will be negative to x-ray and his serum acid phosphatase not elevated?

A. Yes, that is true.

Q. In such cases, how can you tell whether you are dealing with an early operable or a late inoperable prostatic cancer?

A. In such cases, we must rely entirely on the information provided by a carefully done rectal-digital examination.

Q. In the final analysis, then, the rectal examination is the most important element in the diagnosis of prostatic cancer?

A. Yes, that is true, and is worth the emphasis of repetition: the rectal examination is the most important element in the diagnosis of prostatic cancer.

Q. Does hormone therapy cure prostatic cancer?

A. No. Although the administration of hormones may cause profound symptomatic improvement, there are no well-authenticated cases to prove that cure has been achieved. In light of our present knowledge, only radical surgery can produce cures.

Q. What is the rationale of hormone therapy in prostatic cancer?

A. Such therapy is used in surgically incurable prostatic cancer because it has been demonstrated that in many cases depriving the neoplasm of the normal amount of androgen developed by the

testes of the normal male will retard its growth and may cause it to regress. This therapeutic effect is accomplished in two ways: (1) by vitiating the effect of the androgen produced by the administration of estrogen, and (2) by bilateral orchidectomy, which removes the principal source of androgen, the testes.

Q. Which of these gives the best results?

A. Carefully compiled statistics indicate that on the average, the life expectancy of a patient with advanced prostatic cancer who has had the benefit of orchidectomy at the time the diagnosis was made is four months longer than if he were treated with estrogen alone.

Q. How long does the patient derive benefit from such therapy?

A. The effect may vary. In some cases it may be prolonged, going on for years. In others, it is extremely transitory, if there is any effect at all.

Q. What conditions the response to such therapy?

A. In general, it is probably the histological character of the neoplasm. Those presenting a microscopic picture closely resembling the adult glandular structure of the normal prostate may be expected to respond well. The more undifferentiated—that is, less mature—neoplasms will respond poorly, if at all.

Q. Are there any sources of androgen other than the testes, and if so, how is their effect counteracted?

A. The adrenals are known to be an important source of androgen. Now that cortisone is available for replacement therapy, bilateral adrenalectomy in addition to orchidectomy may come to have an important place in the management of advanced prostatic cancer. It is as yet too early to evaluate the results in those cases in which the procedure has been tried.

Q. Do the radioactive isotopes offer any promise in the management of prostatic cancer?

A. Some progress is being made in this direction, but it is as yet too early to allow any definite conclusions. Radioactive gold injected directly into the carcinomatous prostate seems to cause marked regression in advanced cases. Other substances are in the process of trial.

Q. To summarize, what is your advice regarding the therapy of prostatic carcinoma.

A. Strive for the development of greater acuity in rectal-digital palpation of the prostate so that a higher percentage of early prostatic cancers is found. For these cases, a 50-58% cure rate is possible by radical perineal prostatectomy. In advanced cases, relieve the urinary obstructive symptoms by transurethral prostatic resection and attempt to arrest the progression of the disease by orchidectomy preferably or by estrogen therapy if the former is not feasible.

213 Medical Arts Building.

Plastic Surgical Instruments Developed

Surgical instruments made from methyl methacrylate resin (lucite, trade mark) have proved superior in many ways to their metal counterparts, it was reported in a recent *Journal of the A. M. A.*

Developed for use in neurosurgical operations, the transparent plastic instruments are easy to make, inexpensive, easily handled and light in weight, according to Dr. Frank T. Padberg, of the department of surgery, Northwestern University Medical School, who designed the instruments.

REFRESHER ARTICLE

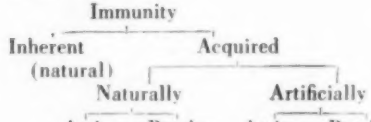
Immunity

With Special Reference to Pediatric Immunizations

This summarization attempts to cover the essential information on the subject and is designed as a time-saving refresher for the busy practitioner.

Resistance is the power of the animal body to care for pathogenic germs which have gained entrance into the body by disposing of them or at least preventing the germs from proliferating and elaborating their poisons.[1] When this resistance is especially marked it is called immunity.

Schematically immunity has been represented as[2]



Inherent Immunity may be a genetic resistance to a particular disease as:

1. Species Immunity. Many of the infectious diseases which commonly affect man do not, as far as it is known, occur spontaneously in animals, or

2. Racial Immunity. This may be the result of generations of endemic disease that results in a certain degree of inherited immunity; for example—the comparative immunity of the Negro for Yellow Fever —a disease of greatest virulence for the white man and conversely ravages of Tuberculosis in Eskimos.

It is also thought that inherent immunity may be the protection afforded by healthy intact tissues.

Naturally Acquired Immunity is of two types:

1. Neonatal or Passive Type Infants in the first few months of life are strikingly immune to certain diseases: Scarlet Fever, Measles, German Measles, Diphtheria, Mumps, Rheumatic Fever, Influenza, Polio, and Infectious Jaundice. These diseases are almost unknown in early childhood unless the mother is suffering from the disease at the time of confinement. The antibodies have been manufactured by the mother and passed via the placenta to the body of the infant or through the colostrum in nursing babies. This neonatal or passively acquired immunity is transient and disappears at variable intervals;[3] for Scarlet Fever, Measles, and German Measles the duration is about six months; for Mumps it is longer, the disease rarely occurring before the third year. Also, one rarely sees Rheumatic Fever before age three or four. The Flu pandemic of 1918, for example, had a striking tendency to spare young infants.

An interesting observation has been made by Geoffrey Edsall[4] in which some infants in the neonatal period were found to be Schick positive (no maternally transferred antibodies). These are the newborns of susceptible mothers and therefore susceptible. This probably is the result of the low incidence of Diphtheria as a disease and, with the reduced prevalence of Diphtheria bacilli, artificially induced immunity lacks the stimulus necessary to keep it up and so is not as lasting as it once was. Therefore the stim-

ulus must be produced early and frequently.

2. Active Naturally Acquired immunity is that immunity which follows an attack of the disease. The body manufactures antibodies and is thus resistant to further exposure to the infective agent for a limited time or for life.

Another type of acquired resistance[3] is that seen in the case of chronic diseases like Syphilis and Tuberculosis where the presence of the disease in a latent form confers complete or partial protection to reinoculation.

Some diseases like Diphtheria, Scarlet Fever and Polio occur, at times, in such a mild atypical form as to give no evidence of the attack and yet the presence of the infectious agent calls forth an immune response and a naturally acquired immunity results.

Artificially Acquired Immunity is immunization brought about by agents deliberately introduced into the tissues or by the process of inducing a modified infection.

1. Passive Artificially Acquired In this the body takes no active part in its own defense as the artificially prepared serum, from animals — for example, the horse; or the serum from a patient convalescent from an attack contains the substances needed to neutralize the toxins. This antiserum confers immediate resistance (as in Diphtheria and Tetanus antitoxin) which lasts only until all of it is excreted —usually two to three weeks. This, incidentally, emphasizes the need, in deep, severe wounds, of repeated weekly Tetanus antitoxin injections for several weeks.

This method is applicable only to those micro-organisms which elaborate severe toxins, for example Diphtheria and Tetanus. Those which exert harmful action by the contents of the bacterial cells do not, as far as it is now known, produce antitoxin in the serum of immunized animals.

2. Active Artificially Acquired For this type of immunity protection is conferred by the injection of antigen in the form of a vaccine containing intact micro-organisms or virus in 1. a modified form as Yellow Fever or Typhoid vaccine or 2. as a toxoid which is the exotoxin of the organism that is rendered non-poisonous by treatment with formalin or by being precipitated with alum—as Diphtheria or Tetanus, or 3. as a result of a modified attack. The best known example of this latter is vaccination. The injection of Cowpox produces Vaccinia locally and this gives systemic protection against the more serious Smallpox. Another more recent example: if immune globulin or convalescent measles serum is given to a child who has been exposed to Measles, it modifies the attack to a mild form of infection which produces subsequent active immunity.

In active artificially acquired immunity two or more injections are needed. The first injection is the primary stimulus to prepare the antibody factories which, after the second stimulus, give active response in the form of antibodies. It takes weeks for the immunity to develop but it lasts several months to several years. As it begins to wane it can be quickly raised again by a small booster dose of the antigen.

In our discussion of pediatric immunizations, Whooping Cough, Tetanus, Diphtheria, and Vaccination are considered as a group for routine immunizations. Typhoid, Influenza, Rocky Mountain Spotted Fever and Scarlet Fever will be taken up separately.

The most recent advances in the pediatric age group immunizations have to deal with 1. Age at which immunizations are started and 2. Use of combined or simultaneous immunizations.

Age It has been held that the immaturity of the immune mechanism of the newborn interferes with passively acquired immunity.[3]

In 1950 Sant Agnes, Sauer and Tucker[5]

suggested that the capacity of the body to produce antibodies in response to antigenic stimuli increases with age for if a vaccine containing Diphtheria and Pertussis was given at four, five, and six months there was:

97% protection vs. Diphtheria
65% " " Pertussis

whereas if they started after six months and gave 3 triple vaccine ingredients there was:

100% protection vs. Diphtheria
83% " " Pertussis
96% " " Tetanus

If a triple vaccine was started at three months for four monthly shots there was:

86% protection vs. Diphtheria
98% " " Pertussis
100% " " Tetanus

Christie and Peterson[6] feel, however, that there is no physiological immaturity of the immune response mechanism in the newborn and that the differences which are found in the response to Diphtheria and Pertussis inoculations are probably due to 1. passive immunity (in Diphtheria, this comes from the mother, there is no inherent immunity to Pertussis) 2. or to lack of adequate stimulation either because of ineffective vaccines (alum precipitated vaccines have been found to be much superior to fluid vaccines) or because of insufficient amounts of vaccine (100,000,000 Pertussis organisms are needed for primary immunization) or 3. because of previous experience with infection.

They found that passive immunity from the mother had a greater disturbing influence on the production of primary immunity than age did; for it not only interfered with the development and maintenance of high agglutinin titers but also tended to inhibit the capacity to respond to secondary or booster immunizations. Miller, Faber, and Ryan[7] found, by checking the antitoxin titers in the newborn, the procedure of producing passive immunity by immunizing pregnant women was too uncertain to be recommended.

The quantity of antitoxin found in the newborn of Schick negative mothers (naturally acquired passive immunity) was found to interfere with the age at which babies can respond to active immunization by another group[8] but as Edsall[4] has shown Diphtheria occasionally occurs even in Schick negative individuals. He states further that in the increased incidence of Diphtheria in 1940 there was also an increase in severity. This may have been the result of new strains from Europe or, due to the widespread immunization program, there were fewer cases in the recent past to cause other subclinical cases and thus actively acquired immunity in those not injected.

In 1945 and 1946 Sako and Sauer[6] independently demonstrated that the development of antibody formation to protective levels could be demonstrated even when very young infants were injected with Pertussis vaccine. It has been stated[9] that "more infants die of Pertussis or its complications than all the other communicable diseases combined, the largest number of deaths from Pertussis—under six months." Therefore immunization should be attempted as early as possible for several months must elapse from the time of the last injection until active immunity develops.

The psychic trauma is diminished when primary immunization is completed before six months and, as the memory span of infants under six months is short, this enables the physician to complete the series without preliminary audible remonstrance occurring at each visit.

Combined Immunization Although the antigens of Pertussis, Diphtheria, and Tetanus were at first given separately and still are in certain specific instances, their use in combination as so-called "triple" vaccines has become more and more common practice. At first the triple vaccine was used because it cut down on the number of injections to be given to the infant

but, with use, other advantages have been discovered. It has been discovered,[10] for example, that, if Diphtheria and Tetanus alum precipitated toxoid as a combination was given, the antigenic potency was lower than if Pertussis vaccine was added in the group of infants aged one to three months with which they worked. Thus with an alum precipitated antigen containing Diphtheria and Tetanus and Pertussis they found a satisfactory response against Diphtheria and Tetanus in all and although for Pertussis only a few developed a level of titers felt to be sufficiently high to eradicate the susceptibility to the disease, they felt that 75% would probably be protected if subjected to the usual family exposure.

Edsall[4] found that the use of an "antigen potentiated by admixture with adjuvants or combined with other antigens as Pertussis bacilli" may overcome the handicaps found in neonatal Diphtheria immunizations. He found that 201 infants under six months who received an alum precipitated Diphtheria toxoid combined with Pertussis showed essentially the same Schick negative rate one year later as 236 infants started at six months who received an alum precipitated Diphtheria toxoid alone. The booster response in both age groups one year after the primary immunizations was equally good in both.

As McGinness[12] so aply states it has been shown that the reactions to multiple antigens available today (now that they contain less alum; they are 70% pure as compared with 25% pure a few years back) are in no way more severe than single antigens and that the multiple antigens have an adjuvant effect one on the other. Because of the greatly superior antigenic response to alum precipitate or aluminum hydroxide adsorbed toxoids these are preferred to the fluid antigens.

In summary—Pertussis is a severe and prevalent disease to which apparently all newborns are susceptible. They should receive early protection. Diphtheria antitoxin titers show good response with the early use of triple vaccine. In Tetanus there is no problem of preimmunization passive immunity (except if passive prophylaxsis has occurred) and the usual dose is capable of evoking a high level of antibody in all infants and children which is adequate for complete protection. Tetanus vaccine is so well tolerated that all should be actively immunized against this disease.

Nelson[11] Schedule—start at age two to four months—give three triple shots at monthly intervals.

If a lapse of more than two months occurs between any two shots, Nelson suggests starting again.

Boosters It was found[6] that the response to the second vaccination with toxoid was superior to the primary. The antibody levels were higher and persisted at higher levels for the twenty month period studied with less tendency to fall off than during thirteen months following the primary vaccination. Therefore, secondary or booster immunizations one year after the primary injections are highly desirable, in fact necessary, if one is to maintain an adequate level of immunity.

The desirable intervals between further subsequent injections are much disputed. At exposure to disease or on injury a previously immunized child should be given[11] a prompt booster dose of fluid or alum precipitated triple vaccine before the age of four. For older children single antigens are recommended as multiple ones may cause more severe reactions in these older children. Diphtheria toxoid booster intervals should be about four years apart. Pertussis boosters should be given at three and six years of age. In a Tetanus study[21] subjects were found to have high titers persisting for up to four or five years after the primary immunization. A striking increase of titer occurred within seven days of the booster, starting on the fourth day and hitting its highest point on the tenth day after the booster. It is felt the op-

timum protection against Tetanus included 1. adequate 1° immunization 2. maintenance booster dose of toxoid 0.5 cc. approximately every four years and 3. a booster dose with injury which may result in Tetanus and also a prophylactic antitoxin injection with a deep lacerating injury or one which has involved meninges. Bigler[21] found that titers increased rapidly following booster shots even in children who had primary injections up to ten years previously. Protective levels were obtained with each of as many as five spaced booster injections.

Reactions In infants six weeks to three months as studied by Peterson and Christie,[6] toxic reactions were not increased over that of older children. In 40% no reaction was noticeable, in 40% only a mild or moderate fever occurred on the evening of the injection and in only 20% did the fever last more than twelve hours and then usually not more than twenty-four hours and only occasionally forty-eight to seventy-two hours. It is felt that the best policy is to anticipate to the parents the possibility of fever and malaise for twelve to forty-eight hours and prescribe 75 mg. acetylsal. at bedtime on the day of injection and every four hours for three or four times for fever or irritability.

Persistent nodules occur at times and small indurated masses occasionally persist for six to eight weeks after injection in the local area. These are not painful for more than three to four days and need no treatment.

Occasionally, rather uncommonly, at the injection site a minimal subcutaneous fibrosis may occur with the later formation of a dimple at the site.

Febrile convulsive seizures occur very rarely and then usually only in a family with a febrile convulsive history. These occur usually two to three hours after the injection.

If reactions of more than mild intensity occur after the initial injection of triple vaccines, it is recommended[12] that single vaccines be used for the subsequent injections. As a further precaution the injections should never be given in the presence of respiratory or other infection or when the child is actively teething.

Sauer and others[9] suggest the use of alternate gluteal areas for the injection of the alum precipitated triple antigen. They find there is delayed absorption which increases the immunity response and lessens the frequency of systemic reactions. Where given deeply intramuscularly few alum cysts were formed.

Their schedule:

Monthly at 3, 4, 5, 6 months triple alum precipitated vaccine

Smallpox at 9-12 months.

2nd to 3rd year Booster triple

5th to 6th year Booster triple and revaccination

Christie and Peterson's Schedule:

Injection

1. 4-6 weeks Pertussis vaccine
2. 8-10 " " " Diphtheria toxoid, Tetanus toxoid
3. 14-16 weeks same as 2.
4. 20-22 " " " "
5. 76-80 " ½ " " "
6. 60-70 " ½ " " "

Total Pertussis organisms 100,000,000 or more in initial course.

Smallpox Vaccination by the multiple pressure method is suggested by Nelson[11] to be given between the fourth and seventh month and by others[9] between the ninth and twelfth month. Most authorities recommend it be given during the first twelve or eighteen months. As severe reactions, such as Postvaccinial Encephalitis,[4] are less frequent in infants than older children and less frequent in revaccinations, early first vaccination is to be preferred to waiting for school years. A word of caution is suggested that when the infant has Eczema, vaccination should be deferred except in the case of a Smallpox outbreak and if an older sibling is vaccinated the eczematoid infant should be carefully guarded from contact with the vaccination. This is to preclude the

possibility of Eczema Vaccinatum. Secondary infections are less when parents are advised[6] to use no dressings, ointments, or other applications and to wash the area daily with soap and water and blot it dry.

For the other miscellaneous group for which protection is sometimes necessary the following remarks give the most recent thoughts.

German Measles There is no vaccine for active immunization.[24] Convalescent adult serum has been tried[12] as has immune serum globulin as a passive immunizing agent. Results are contradictory but for a woman in the first trimester of pregnancy two doses of 10cc. each five to ten days apart are suggested, the woman to be immediately removed from source of infection.

Measles The mortality of Measles is low but 80% of the deaths that do occur, occur in children under five from Broncho, Lobar or Influenzal Pneumonia following Measles.[23] Efforts to modify Measles should be made in this preschool age group and to prevent it in infants or in children with other diseases such as Rheumatic Fever or in pregnant women who have not previously had Measles. There is at present only one way to acquire active immunity to Measles and that is by having the disease. The new Measles chorio-allantoic membrane vaccine has proved[15] disappointing thus far as whatever protection was afforded by its use was very minimal.

For passive immunization the gamma globulin fraction of normal human plasma is a safe and effective agent.[13] This is more lasting than adult whole blood or serum or reconstituted dry plasma and has several other important advantages:[11] 1. The small volume required. 2. there has been no incidence of Viral Hepatitis to date, 3. and it contains no r.b.c. (as whole blood does) therefore there is no possibility of development of sensitivity to r.b.c. (Rh factors).

Depending upon the amount given and the time in the incubation period: complete protection (early incubation period and large amount) or modification (later or smaller amount) occurs. Inoculation[13] within 72 hours of the expected appearance of the rash, that is, in the catarrhal stage still, reduces the severity of the disease. This modified Measles[14] does result in lasting immunity in most persons. Some few have had second attacks but the severity of the second attack did not depend upon the degree of modification.

Mumps In childhood Mumps is usually mild and restricted to the salivary glands so that vaccination of children should not be attempted[16] until 1. a prolonged immunity can be obtained or 2. unless the clinical condition of the child or children renders an attack of Mumps undesirable at a given time, for example, a child with active Rheumatic Fever or Tuberculosis. In adults Mumps is more severe. Orchitis or Oophoritis must often be dealt with. One cannot give absolute assurance of resistance to Mumps by checking either with the complement fixation or positive skin test.[17] It is felt both should be used simultaneously to find the immune status of the individual as he may have had a previous unapparent (subclinical) infection and be immune. The complement fixation is more sensitive in children and the skin test in adults. Immunity in Mumps can be induced by[16,17] 1. the intracutaneous vaccination with inactivated virus—a transitory method or by 2. the subcutaneous vaccination with an inactivated virus obtained by the concentration of allantoic fluid. Large amounts of the fluid are necessary to obtain the 4cc. needed to assure protection. This is very expensive, especially if it is used on a large scale. Or 3. By the oral spraying of attenuated oral vaccine. Of 410 subjects sprayed only six showed minor clinical signs of mild parotitis or submaxillary adenitis. On later exposure of these subjects the results suggested that protection lasted for nine to twelve months. All of

these methods are still in the experimental stage and should not be used indiscriminately. The gamma globulin fraction of normal human plasma was used[18] for both passive immunization (in 50cc. dose) and early treatment (in 200cc. dose) with some value.[18]

Influenza Immunization gives protection to one in six persons, therefore[4] in persons with a severe flu history, in young children or in the aged where the mortality rate is highest or in groups where absenteeism creates a significant problem, immunization seems advisable even if the duration of the immunity is short.[24] Emphasis is made to vaccinate before anticipated epidemics as Virus A has a cycle of every two to three years and Virus B every four to six years. There are, however, periodic and unpredictable shifts in the antigenic pattern of Virus A so that the American Public Health Association states that immunization to Influenza is still in the experimental phase and does not justify routine use. It was found that 0.1cc. intracutaneously gave better results with fewer local and systemic reactions. Certainly as a booster the intracutaneous route was highly effective.

Typhoid Is not needed[11] routinely but only for those residing in or planning to travel in endemic areas. Used in studies[6] with Diphtheria, infants three to six months showed little or no untoward effects from Typhoid inoculations. A basic set of 3 inoculations with a booster every two years should be given.

Rocky Mountain Spotted Fever Vaccine Is recommended[11] in areas where ticks are present for those over one year of age. Prior to 1942 only five to nine cases per year occurred in New York State, now fifteen to seventeen are reported yearly.[19] After a 1° immunization of three at 7-10 day intervals, the booster consists of only one injection yearly. The precaution[11] of watching out for allergic reactions because of the use of egg vaccine is wisely heeded. The latent sting of this Rickettsial body can be eliminated by the use of .02-.03cc. of procaine (N.F. sol.) with each dose of the vaccine in the syringe.

Rabies If Rabies is endemic to an area or dogs go into a neighboring endemic area active immunization with Rabies vaccine must be considered but it has been found[4] that paralytic accidents occur 1 in 5800 times with Rabies vaccine. Egg fluid vaccine, now available for dogs, is being tried[20] on humans—no results to date.

Scarlet Fever Active immunization is no longer carried out except in communicable disease hospitals for personnel[24] having negative Dick tests. Chemoprophylaxis and therapeusis has proven very effective.[11,12]

The restriction laid down in the summer of 1951 against the giving of elective injections during Poliomyelitis season followed upon the publication of data in England and Minnesota showing a high degree of correlation between site of injection and site of paralysis. It needs further study—suffice it to say that "immunization has not proved to entail any added risk to subjects in communities that are at the time free from Polio"[23] and most agree it need not apply to infants under six months in whom the incidence of Polio is relatively low.

In conclusion, there is little doubt that where specific prophylaxis is safe, practicable, and effective, prevention is always better than cure.[2] It may be argued that in these days of antibiotics in Typhoid and Tick Fever why should patients be subjected to the inconvenience and pain of inoculation? But when the expense of hospitalization and nursing care is considered or where the onset is insidious as in Typhoid and Whooping Cough the damage to patients and contacts has already occurred before treatment can be started.

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The Value of Cholangiograms During Biliary-tract Surgery

Operative cholangiograms were made in 115 patients during surgery on the extrahepatic biliary tract, and 83.4% of films were satisfactory, according to Hight and Lingley. Writing in the *New Eng. J.* [*246*: 761(1952)], the authors state that before a cholangiogram is made the common duct is exposed sufficiently so that its size and the condition of the wall can be appraised. A needle similar to that used for infiltrating local anesthetics for tonsil operations is used. This eliminates the danger of having the needle penetrate the opposite wall of the common duct, thus permitting extravasation of the opaque medium. Full-strength Diodrast is so dense that its shadow may obscure small stones in the common duct. Therefore, 10 cc. 40% Diodrast (7 cc. with 3 cc. saline) is usually used. When a thin shadow is desired, Diodrast may be even further diluted. In this series of 115 cholangiograms a diagnosis of stones was made in 22 cases, stenosis of the ampulla in 4, and tumor of the common duct in 1 case. Operative cholangiograms were positive in 27 (23.4%) patients. The value of this procedure is now recognized and during the last 2 months of this study operative cholangiograms were done on 81.4% of cases submitted to biliary-tract surgery. Cholangiograms made during the postoperative period have revealed residual stones in a few cases despite exploration or inconclusive operative cholangiograms. Preoperative cholangiograms are therefore now obtained routinely before the common duct tube is removed when it is doubted that all stones in the common duct were removed.

Aids in Early Diagnosis of Cancer— The Biopsy

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If for the present, we are to rely on early diagnosis and early adequate treatment to increase the cure or survivor rate of cancer, it behooves us to make a few remarks to the general practitioner concerning the use of the biopsy for early positive diagnosis. Roughly, seventy-five per cent of all patients are seen first by the general man. The first contact with the patient is the most important. The alert general practitioner can, in the ordinary course of the history and physical examination, see or feel many things which may bring the word cancer to his attention. If the general practitioner neglects his examination or does not know what to look for, a great detriment to the best interests of the patient and to himself can occur.

In any cancer education program a tremendous responsibility falls on the general man. Either he must recognize suspicious lesions when he sees them or he must ignore them. If he ignores them either through ignorance or simple neglect, he is practically condemning his patient to death from cancer several months hence. If he is alert and able to recognize suspicious lesions, he must in conscience be able to prove or disprove his suspicions.

What then can a general practitioner do about proof or disproof of any suspicious lesion? He can do several things. First, he can acquaint or reacquaint himself with the common types of cancer and the favored sites of the body where cancer can occur. Secondly, he can think a little and, no doubt, he will remember that the majority of common cancer sites can be seen or felt on routine physical examinations. He must also realize that most of the favored sites of cancer lend themselves to removal of suspicious lesions rather easily. Hence, a biopsy is in most instances obtained readily.

The common sites where lesions may be seen are given below not in order of incidence, but as areas which are easily seen or felt by the physician when he makes his physical examination.

Skin The skin is a favorite place for a multitude of lesions both infectious and malignant or relatively malignant. Cancer of the skin occurs in several forms, usually on the exposed surfaces of the skin and in fair individuals. Hence, cancer of the skin is more common in farmers, sailors, salesmen and laborers who work outdoors.

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Cancer of the skin usually occurs on the skin ot the hands, or neck and face. It is usually of the basal or squamous cell type, appearing as a chronic lesion which crusts and bleeds, recrusts and finally leaves a small ulcerated area with a pearly border and somewhat rolled edges. Biopsy of the skin may be taken early, using local anesthesia and removing the entire lesion with about one centimeter border of good skin on all sides of the ulceration. Small biopsies from the edges of growing lesions are dangerous and are not as acceptable to the pathologist who must read the slide as the entire lesion. If the lesion is large, there is no law which says that total excision and skin grafting is not allowed. Biopsies of the skin are best taken by excision with the knife. The electric knife may be used, but the heat generated sometimes disturbs the configuration of the cells. Likewise, the wounds made by the electric knife may take a little longer to heal.

Lip The lip cancer should be evident from the beginning. Cancer of the lip usually occurs on the lower lip and again it is predominantly present in outdoor men. Cancer of the lip is seen from the fifth decade on, but may occur earlier. Any lesion on the lip which has been present over two weks should be investigated. The biopsy and the removal of the entire lesion may be done at the same operation. A simple V excision through the whole lip about 1½ centimeters away from the lesion will usualy suffice to cure early cancer of the lip. If the submental glands are involved a radical neck dissection is indicated.

Buccal Mucosa The buccal mucosa not only takes in the area over both cheeks, but includes all of the mucous surface of the mouth. This means that the inspection for cancer of the buccal mucosa should include the cheek, the floor of the mouth, soft and hard palate, the buccal alveolar region and the gums also. Cancers of the buccal mucosa are more likely to occur near the inside angles of the mouth, the floor of the mouth and the area of the cheek which continues on to the alveolar margins. Again cancers of the mouth and floor of the mouth and buccal mucosa are more common in men than women. Cancers may begin as small white areas which persist and later ulcerate leaving an ulcer crater, the edges of which are rolled. Lues may also occur in the mouth and must be ruled out. Cancer and lues often occur simultaneously. Most lesions of the mouth may be excised in one block, the remaining area then being treated with actual cautery or radium or radon seeds. Some men, especially, in the case of small growths excise the entire growth and then suture or slide a graft over to cover any defect. Suturing of wounds in the mouth or grafts within the mouth are especially likely to be followed by some infection and sloughing. It is imperative that the mouth be kept scrupulously clean following any type of intra-oral surgery.

Tongue Cancer of the tongue occurs mostly in men, but is seen occasionally in women. Cancer of the tongue is a rapid type of growth and metastases occur early, both ipsi and contralateral. For this reason, no time should be lost in treating these lesions. Cancer of the tongue usually occurs on the lateral sides, the base and occasionally on the tip or anterior third. Biopsy may be taken, but this is a dangerous procedure in the office. It is probably safer to admit the patient to a hospital where all safeguards may be needed. The tongue is a very vascular organ and bleeds very freely when cut even slightly. A biopsy may be taken and then an electrocoagulator used to control all hemorrhage. Most men have stopped doing glossectomies or hemiglossectomies and are relying on the use of radon or radium seeds to stifle or eradicate the disease. Five year survivor rates for cancers of the tongue are very depressing when one looks at the statistics from

various clinics throughout the country.

Pharynx and Hypopharynx Carcinomas in these areas may be very easily missed unless a physician makes it a practice to inspect the pharynx and hypopharynx when he examines the patient. The use of the laryngeal or dental mirror should be standard knowledge for all doctors. With a long-handled dental mirror and a fair light the nasopharynx, pharynx and hypopharynx may be inspected indirectly. If the patient gags easily the nasopharynx and pharynx may be sprayed with a weak solution of cocaine and then the area may be examined, indirectly by use of the dental mirror and even felt by the rubber-gloved finger. Lesions in the area of the nasopharynx, pharynx and hypopharynx may not be suspected until a developing mass appears in the neck. Biopsies may sometimes be taken with the long-handled biting forceps in order to make a proper diagnosis. The electrocoagulator should be handy to stop any hemorrhage. This type of procedure is not recommended to be done in the office unless all safeguards are at hand.

Larynx Cancer of the larynx occurs and again most commonly in the male. Any case of a patient complaining of hoarseness should be investigated. The larynx may be examined easily when the doctor does a routine physical with the aid of a light, a laryngeal mirror and cooperation of the patient. With the help of a long biting forceps and a tissue coagulator a biopsy of suspicious lesions may be taken by the doctor.

Lung Suspected cancers of the lung should be hospitalized and diagnosis established by x-ray, bronchoscope and biopsy. This is no field for the general practitioner.

Esophagus This organ is quite often the site of carcinoma and until lately, not much has been done for the patient except a gastrostomy. Suspected cases of carcinoma of the esophagus belong in a hospital where a biopsy may be done by a man competent in his field. Many advancements in surgical treatment in carcinoma of the esophagus have been made in the past few years. However, early diagnosis and adequate radical treatment are necessary for good results.

Stomach and Small Bowel The stomach is frequently the site of cancer but, as yet, no early diagnostic sign or symptom has been found which would eventually improve the five year or more survival rates. Several things can be done in order to establish a working diagnosis of carcinoma of the stomach. First, gastric analysis may help in that achlorhydria is present in approximately 90 percent of all cancers of the stomach. However, this finding must be taken in conjunction with other clinical manifestations. Secondly, the use of the gastroscope, while still in its infancy, may be developed soon to the point where excellent results may be obtained from this procedure. Thirdly, the examination of centrifuged specimens of gastric juice after the method of Papanicolaou may as the technique improves offer some hope of earlier diagnosis. Fourthly, however, we still rely for accuracy on the use of the x-ray and fluoroscopic machines for the bulk of our suspicious cases of carcinoma of the stomach. Fifthly, we believe that all cases of proved ulcer of the stomach should be explored and the focus removed. We will never raise our survivor results unless we detect carcinoma of the stomach early. Too many cases of ulcer are being treated medically with resultant carcinoma "appearing" later.

Small Bowel Carcinoma of the small bowel is rather rare and is usually not diagnosed except by the use of x-ray.

Large Bowel The first thing to recall concerning carcinoma of the large bowel is the fact that between 60 and 70 percent of these cancers occur within reach of the examining finger or the long proctoscope. For this reason any patient presenting himself to the doctor with a

change of bowel habit or blood in the stool should be examined both digitally and by means of the sigmoidoscope. Biopsy of lesions occurring in the sigmoid or rectum may be easily taken with a long-handled biting type of forceps. This can be readily done in the physician's office. Carcinomata of the ascending colon or transverse or descending colon are usually diagnosed by means of x-ray. All cases of hemorrhoids should be protoscoped before any type of surgery is done.

Cervix Biopsies of the cervix may be taken in the office with a biting type of forceps making sure that several pieces are obtained. Coagulation of the area may then be done with the cautery. Likewise, cytology studies may be done as an office procedure if the physician is capable of staining and interpreting the smears taken. All curettements done for diagnosis should be done in a hospital.

Urinary Bladder Biopsies of the urinary bladder may be taken as an office procedure if the physician is capable of using the cystoscope and the long-handled biopsy knife. Perineal punch biopsy of the prostate is safer to do in a hospital.

Penis and Testicles Biopsies of these organs may be done more safely in a hospital.

Mammary Gland All masses or lumps in the breast should be regarded by the practitioner as cancer until biopsy proves otherwise. These patients belong in a hospital where the mass may be removed and studied histologically. Removal of any mass in the breast is never a procedure to be done in the physician's office.

Thyroid Gland As most carcinomas of the thyroid gland are discovered by the pathologist after the gland has been removed it is necessary that these patients be hospitalized before any attempts at biopsy are done. Thyroid glands that present a single nodule are to be suspected much sooner of being carcinomatous than those glands with multiple nodules.

Bone All biopsies of bone should be done in a hospital operating room.

Conclusions

The biopsy or tissue proof of a disease is the final procedure in diagnosis. A negative biopsy does not mean that the patient is free from carcinoma but that the specimen submitted to the pathologist did not show cancer. Several pieces or in most cases the entire lesion with some normal tissue around it should be the type of specimen that is sent to the pathologist. Many of the common sites of carcinoma can be seen or felt by the practitioner during a routine physical examination. It is the responsibility of the practitioner to suspect, to biopsy and to treat or provide for treatment of any questionable lesion. Any delay between diagnosis and early radical treatment will be detrimental to the patient's welfare.

1504 South Grand.

Medical Student Aid Fund Established at U. of Illinois

The senior class of the University of Illinois College of Medicine has established a Medical Student Aid Fund in honor of Dr. Henry G. Poncher.

Dr. Poncher is professor of pediatrics and head of the department.

Dean of Student Affairs Maurice J. Galbraith has announced that funds may be given to needy and deserving students. It is anticipated that students who receive gifts from this source, when financially able, will make contributions to the fund.

The 1952 graduating class has established the fund with the hope that future graduating classes also will make contributions.

The Management of The Rh Negative Patient During Pregnancy

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It is now twelve years since the Rh factor was first discovered in human blood cells[1] and our knowledge of this subject and its clinical application in pregnancy have correspondingly increased during this time. The Rh negative factor in certain instances in pregnant women is responsible for the development of erythroblastosis in the newborn infant. Approximately 86 percent of the white race are Rh positive and the remaining 14 percent Rh negative. The Rh factor is also positive in 85 percent of colored Americans[2] and in 98 to 99 percent of the Mongolian race.[3] It is inherited as a dominant Mendelian characteristic similar to the development of the various blood groups.

An Rh negative woman married to an Rh positive man may have a baby that is either Rh positive or Rh negative depending on whether the husband is homozygous or heterozygous. If the baby resulting from this type of marriage is Rh negative it will be normal; if it is Rh positive, the first pregnancy, and the mother has not been sensitized against Rh positive erythrocytes by a previous blood transfusion or by the intramuscular injection of human serum,[4] this baby will also be normal. Hellman and Vosburg,[5] in analyzing 27 cases of erythroblastosis, found that in nine patients the disease followed previous blood transfusion. However, if it is such a mother's second or a subsequent pregnancy the possibility of erythroblastosis in the Rh positive infant exists. It is estimated that this disease in infants will occur approximately once in thirty pregnancies in Rh negative women. On the other hand, if an Rh negative woman is fortunate enough to be married to an Rh negative husband a normal Rh negative infant will be born, regardless of the number of her pregnancies.

The three clinical types[6] of erythroblastosis occurring in an Rh positive infant are hydrops fetalis, icterus gravis and hemolytic anemia with usually an overlapping of at least two of these groups. Examination of the blood will show a definite anemia and an increase of nucleated erythrocytes.

This disease occurring in newborn infants is due to fetal blood gaining access to the maternal circulation through the placental barrier. If the blood of an Rh positive baby in the uterus of an Rh negative mother gains access to the blood of the mother, an immune reaction is set up in the mother's blood against Rh positive erythrocytes. This immune reaction does not affect the first child unless the mother has been sensitized by transfusion with Rh positive blood prior to her pregnancy. However, in subsequent pregnancies in the presence of an Rh positive

fetus, the immune reaction of the mother's blood is stimulated and antibodies for Rh positive blood are formed. These antibodies can then pass into the blood stream of the fetus and destroy an excessive number of fetal red blood cells.

There are two types of maternal antibodies, the agglutinating or complete type and the blocking or incomplete. It is now believed[7] that the normal placenta does not permit the maternal agglutinins to traverse to the fetus; however, the blocking antibodies do traverse the placental barrier and are responsible for causing erythroblastosis.

In order to treat the newborn infant at the earliest opportunity, and before the clinical and pathological manifestations of erythroblastosis develop, it is necessary to know prenatally the degree of maternal sensitization that is occurring, particularly in the last trimester of pregnancy. The following plan should be used routinely with all obstetric patients.

At the time of the initial visit blood is taken for Rh determination. If the woman's blood is Rh negative, her husband's blood should also be subject to Rh determination. If the husband is Rh negative a normal Rh negative offspring will be born. If he is Rh positive then further tests should be performed on the husband to determine if he is homozygous or heterozygous. If the resulting test shows the husband to be homozygous, all the babies born of this marriage will be Rh positive; if he is heterozygous there is a chance that a normal Rh negative baby may be born. If this is the mother's first pregnancy and the husband Rh positive, no further concern need be given unless the mother has previously received a blood transfusion, in which case Rh titres should be taken. It is a good plan to take at least one titre toward the end of the first pregnancy to see if iso-immunization is occurring as a rise of titre at this time would certainly affect the prognosis for a second pregnancy expected to have a favorable outcome for the baby. In all subsequent pregnancies the Rh titre should be taken at monthly intervals, starting at the fifth month and at weekly intervals during the last month when a rising titre is present. It has been definitely shown[7,8,9] that a high antepartum titre of agglutinating and especially of blocking antibodies will usually result in some degree of hemolytic disease of the infant and that the higher the antibody titre the more severe will be the disease in the infant. With the antigens now in use, antibodies may be present in dilutions ranging from 1:2 to 1:512[10] and occasionally 1:1024 or higher.[11] In some instances near the end of the third trimester a steadily rising titre will show a sudden drop in both the agglutinating and blocking antibodies at the 36th or 37th week. This sudden drop in titre may be responsible for irreparable damage to the fetus and perhaps a deadborn baby if the pregnancy is allowed to go to term; it is at this time that labor should be induced.[12] Similarly, with a rapidly rising high titre, especially of the blocking antibodies, occurring in the 37th or 38th week of pregnancy, particularly if the woman has previously lost a child from erythroblastosis, in my opinion, labor should be induced. Otherwise, if there is no rise in titre, or a slight or moderate rise, pregnancy is allowed to proceed to term and cesarean section is performed only for definite obstetric conditions.

The Rh factor is not responsible for any increase in the rate of early abortions. Analyses of several large series of patients have shown the abortion rate of Rh positive, Rh negative non-sensitized and Rh negative sensitized women to be approximately the same.[13,14,15,16]

Studies have been made on the possibility of desensitizing Rh negative sensitized women during pregnancy with Rh hapten. To date no significant drop in maternal antibodies or improvement in the prevention of erythoblastosis has been

found with the use of hapten.[17,18,19] Recently Hoffman and Edwards[20] reported beneficial results on 50 Rh negative women with the use of progesterone and hykinone. They administered 10 mg. of progesterone orally daily and 4.8 mg. of hykinone weekly by intramuscular injection over an average period of four and one-half months during pregnancy. They found that those women with negative antibody titres, when first seen, showed no subsequent rise in titre and the patients who did show antibodies on their initial tests showed a gradual diminution or disappearance of antibodies. None of the patients so treated delivered erythroblastotic bobies. However, this is a relatively small series of patients and it is hoped that future studies will be forthcoming.

At delivery the cord blood is immediately examined for the Rh factor, blood type, red blood count, hemoglobin, nucleated red blood cells and the Coombs test.[21,22] A positive reaction of the Coombs test performed on cord blood indicates that the antibody is fixed to the red blood cells and is a sign that some degree of clinical erythroblastosis will develop in the infant.[10] The cord is left approximately three inches long. If the infant is Rh negative it will be normal even if there is some rise in the mother's titre which could be present from previous sensitization. If the infant is Rh positive, the above laboratory findings normal, and the baby's clinical condition satisfactory, the policy of expectancy can be adopted. Further examination of the baby's red blood count, hemoglobin and nucleated red cells should be performed daily for at least three days.

Treatment should be given if anemia is present at birth or if subsequent drops in hemoglobin and red blood count occur. The presence of an excessive number of nucleated red blood cells also calls for treatment. Clinical signs indicating the need for treatment are pallor, toxicity, jaundice, edema or enlargment of the spleen and liver.

Blood transfusion, referred to as exsanguination, replacement or exchange transfusion, still remains the accepted method of treatment.[23] Rh negative group O or group specific blood is used and Rh negative donors should be available. The blood from an Rh negative female donor has been recommended.[24,25] Treatment should be given as soon after delivery as possible if clinical or laboratory signs are present at birth or as soon as jaundice, toxicity or anemia develop. A baby, born of a woman who has already lost one or more infants from erythroblastosis and who has a high antepartum titre, should receive immediate treatment rather than waiting for clinical or laboratory signs to develop. A plea is made for early transfusion of the infant, preferably in the first few hours of life, as it is only by prompt treatment that the complication of kernicterus and its resulting sequela of mental retardment may be prevented.

Exchange transfusion may be given either through the umbilical, saphenous or temporal veins. The plastic catheter of Diamond[26] may be used to advantage. The umbilical vein should not be used longer than ten hours after birth as after that time thrombosis may occur. The baby should be strapped to a circumcision board and under oxygen. Replacement of blood can then be performed in 20cc. quantities until 500cc. has been given over a period of approximately one and one-half hours. Heparin, 10mg. to 150cc. saline, is used to keep the transfusion apparatus clear. Calcium gluconate, 1cc. of 10 percent solution for each 100cc. of transfused blood is given to neutralize the citrate solution used during transfusion. Following the transfusion 150,000 units of penicillin is given intramuscularly for 5 days. Subsequent checks on the baby's blood count are made for several days and further transfusions in 60 to 100cc. or larger quantities are administered if necessary to maintain the blood at the proper

level.

Recently, Goodnight[27] and his co-workers have used ACTH along with transfusion of the infant. They administer 15mg. as the initial dose and follow with 10mg. every six hours for approximately 5 days.

The infants of Rh negative mothers should not be nursed as harmful antibodies may be present after delivery and be transmitted by breast milk.

The placenta in infants with erythroblastosis is larger than normal, greyish-tinged and friable. Microscopically,[28] an increased number of nucleated red blood cells, edema of the stroma, abnormally large villi, and persistence of Langhans' layer will be found.

The following case histories of Rh negative mothers illustrate the points on management already discussed.

Case Reports

CASE 1: This patient was a gravida 2, age 29. Her first baby was normal, husband Rh positive. Agglutinating antibodies, none; blocking antibodies, none. She was delivered at term on January 3, 1952 of a clinically normal female infant.

Examination of the cord blood was as follows: Hemoglobin 125 percent, red blood count 4,800,000, nucleated red blood cells 5, Rh factor positive, Coombs test negative and the blood type O. Subsequent blood studies on the infant were as follows:

Date	Hemoglobin	Red Blood Cells	Nucleated Red Cells#
Jan. 3, 1952	140%	5,960,000	1
Jan. 4, 1952	140%	5,100,000	1

Nucleated red blood cells per 100 leukocytes.

CASE 2: This patient was a gravida 2, age 31. Her first baby was normal, husband Rh negative. She was delivered at term on January 10, 1952 of a clinically normal female infant.

Blood studies on the infant were as follows: Rh factor negative, Coombs test negative and blood type O.

Subsequent blood studies on the infant were as follows:

Date	Hemoglobin	Red Blood Cells	Nucleated Red Cells
Jan. 10, 1952	140%	6,280,000	2
Jan. 11, 1952	140%	6,080,000	0

CASE 3: This patient was a gravida 2, age 26. Her first baby was normal, husband Rh positive. Agglutinating antibodies none; blocking antibodies none. Labor was induced at term and she was delivered April 28, 1952 of a clinically normal male infant.

Examination of the cord blood was as follows. Hemoglobin 92 per cent, red blood count 4,400,000, nucleated red blood cells 8, Rh factor positive, Coombs test positive, blood type A. Subsequent blood studies on the infant were as follows:

Date	Hemoglobin	Red Blood Cells	Nucleated Red Cells
Apr. 28, 1952	140%	5,740,000	4
Apr. 29, 1952	121%	4,840,000	2
Apr. 30, 1952	112%	4,200,000	3
May 1, 1952	112%	4,190,000	3

A slight physiologic jaundice developed on the 3rd day and subsided by the following day. There was no toxicity or enlargement of the spleen or liver. This infant could be classed as one showing subclinical hemolytic disease of the newborn. Transfusion was not necessary.

CASE 4: This patient was a gravida 5, age 28. She had two normal babies by her first husband. During her second marriage a third child was normal and the fourth infant died a few hours after birth of erythroblastosis. The fourth pregnancy was also complicated by a placenta previa necessitating cesarean section. Her second husband was Rh positive heterozygous. A titre taken at the end of her 2nd month of the present pregnancy did not show any residual maternal antibodies. Starting at the fourth month she was given progesterone 10 mg. orally daily and hykinone 4.8 mg. intramuscular weekly over a period of five months. Repeated monthly tests on the titre starting at the 5th month showed no agglutinating or blocking antibodies at any time. She was delivered by cesarean section of a clinically normal female infant on May 12, 1952.

Examination of the cord blood was as follows: Rh factor negative, Coombs test negative and blood type O. Subsequent blood studies on the infant were as follows:

Date	Hemoglobin	Red Blood Cells	Nucleated Red Cells
May 12, 1952	114%	5,000,000	5
May 13 1952	120%	4,600,000	3
May 14 1952	117%	4,640,000	1

If this child had been Rh positive it is probable that some degree of erythroblastosis would have been present.

CASE 5: Courtesy of Dr. Eugene J. Maire. This patient was a gravida 2, age 19. Her first baby was normal, husband Rh positive. A titre taken in her fifth month of pregnancy showed no agglutinating or blocking antibodies. The titre during the last month of pregnancy showed no agglutinating antibodies; blocking antibodies were present in a dilution of 1:64. She was delivered of a female infant weighing 5 lbs. 15½ oz. on May 12, 1952. The baby was pale, slightly toxic, slight icteric tinge present and enlargement of the liver and spleen was palpable. Examination of the cord blood was as follows: Hemoglobin 60 per cent, red blood

count 2,500,000, nucleated red blood cells 644, Rh factor positive, Coombs test positive, and blood type O. A differential count on the first 100 nucleated red blood cells showed normoblasts 61 per cent, erythroblasts 30 per cent and megaloblasts 9 per cent. Replacement transfusion of 500cc. Rh negative, type O blood through the umbilical vein was started two hours after delivery. ACTH, 15mg., was given at the time of transfusion and followed by 10mg. every six hours for five days. Penicillin 150,000 units was given intramuscularly daily for 5 days. Pediatrician Dr. John A. May.

Subsequent blood studies on the infant were as follows:

Date	Hemoglobin	Red Blood Cells	Nucleated Red Cells
May 13, 1952	95%	4,500,000	222
May 14, 1952	102%	4,380,000	94
May 15, 1952	112%	4,860,000	85
May 16, 1952	126%	5,160,000	38
May 18, 1952	121%	5,820,000	3
May 21, 1952	135%	5,520,000	0

The baby weighed 5 lbs. 15½ oz. and was in good health on May 22, 1952, the date of discharge from the hospital.

Summary

It can now be seen that a thorough study of the Rh factor should be an essential part of the prenatal care of every pregnant woman. With careful observation of the principles outlined above in Rh negative women, the obstetrician can be prepared to institute treatment of the infants whenever necessary, soon after delivery. Replacement transfusion with Rh negative blood still remains the treatment of choice for an erythroblastotic infant. It is hoped that further studies in the future will develop some specific method of preventing maternal sensitization in the Rh negative woman.

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Senile Diabetes Mellitus

A Cholinuric Classification and Approach to Treatment

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Introduction The purpose of this paper is twofold. First, a possible differentiation of diabetes mellitus into hypercholinuric and normocholinuric types will be considered. Then, a new approach to the management will be presented. The frequent occurrence of complications in older diabetics leaves much to be desired; and insulin therapy alone does not seem adequate.

Diagnosis A relatively simple test has been devised by de la Huerga and Popper[1] for the determination of urinary choline excretion as trimethylamine and its oxide. Further, these authors have shown that choline excretion is delayed and diminished in fatty hepatobiliary disease. And, since this author has been much impressed by the frequent hepatopathology in some "labile" diabetics and its absence in other "brittle" cases, it was felt that a possible simple classification and treatment technqiue might be evolved.

Material and Methods Some fifteen diabetics between the ages of 55 to 70 were selected as a basis for this study over a six month period. Each presented some manifestation of diabetic neuritis. Only objective signs were employed as criteria for a diagnosis of this complication. These included absent or attenuated tendon reflexes, well-defined areas of sensibility disturbance, and neurotropic changes. Since each patient had been under treatment by diet, with or without insulin, the previous course of the disease in each individual was used as a control.

The patient, after basal determination of urinary choline as total trimethylamine (TTMA), phospholipid phosphorus, cholesterol, and urinary urobilinogen, was given two grams of choline bitartrate by mouth, on three successive days. Urine was collected in twelve hour samples, and assayed for TTMA. During this 3 day period, the same food was ingested daily, so that the dietary choline would remain constant. The patient was given a detergent-vitamin-lipotropic mixture†, 4-6 capsules daily, along with insulin, when indicated. The routine diabetic laboratory investigations were performed as frequently as the severity of the clinical diabetes indicated. These included frequent blood sugars and ketonuric and glycosuric determinations. Insulin dosage was adjusted to blood sugar alterations. In addition, phospholipid phosphorus, cholesterol, and TTMA determinations were made at regular intervals.

Results The results are presented in the table on the following page.

If one analyzes this table, one will note that an older diabetic age group is presented. Further, in this particular group,

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† Te Gelucaps Cholivascuals used in this study were kindly donated by the Vitamin Corporation of America.

11 out of the fifteen were hypercholinuric. And, some 73% were overweight and of dysplastic habitus. The same eleven had a tendency to hypercholesteremia, hyperphospholipidemia, and a tendency to high urinary urobilinogen levels. A breakdown of insulin requirements revealed that six out of fourteen insulin cases were able to get along without its use. The blood sugar level fell to lower levels in virtually each case; most significant response was in the eleven hypercholinurics. There was likewise, a concomitant drop in cholesterol and phospholipid values. With the above improvements, there was noted a rise in the TTMA excretion values which approached normality. Eleven patients obtained improvement in their peripheral paresthesias.

Some criticism might be leveled at the above statistics and conclusions. The number of cases presented is small. Further, many other data have been omitted in the interest of brevity. However, the significant material is reported. A third criticism is that older diabetics, as a rule, tend to

CASE #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
AGE	62	59	65	55	63	71	58	60	61	67	57	70	60	57	64
WEIGHT															
Initial*	162	147	176	144	133	166	150	138	127	143	129	137	126	151	134
Final **	160	143	175	140	133	160	144	136	127	140	126	134	126	150	129
DURATION															
Years	5	3	7	12	8	2	10	6	3	7	10	8	11	6	2
INSULIN (Reg. PZI U-40)															
Initial	10-10	20-10	0-10	30-15	0-20	20-15	10-5	20-10	10-5	0-0	30-15	20-10	30-10	40-20	15-5
Final	0-0	30-10	0-0	30-15	0-5	0-5	0-0	0-10	0-0	0-0	10-15	0-0	30-10	40-20	0-0
F.B.S.															
Initial	210	215	180	172	204	200	190	206	194	180	202	186	176	182	206
Final	150	146	152	144	134	156	150	140	144	140	152	156	134	142	136
CHOLESTEROL															
Initial	310	170	240	168	212	298	260	226	312	322	250	275	180	162	285
Final	166	166	170	146	160	190	200	176	180	200	180	176	160	150	170
PHOSPHOLIPID PHOSPHORUS															
Initial	11.2	9.6	12.3	10.0	11.7	13.2	12.4	11.8	12.7	14.1	12.1	12.8	10.6	11.0	13.1
Final	9.4	9.0	10.4	9.6	11.8	11.1	10.0	10.1	11.0	9.5	11.2	10.4	10.3	10.5	11.1
URINARY UROBILINOGEN															
Initial	4	1	3	2	4	4	4	3	4	4	4	4	2	2	3
Final	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1
TENDON REFLEXES (x)															
Patellar															
Initial	N	O	N	N	N	N	N	N	N	N	N	N	N	N	N
Final	N	O	N	N	N	N	N	N	N	N	N	N	N	N	N
Achilles															
Initial	N	N	O	O	N	N	N	N	N	N	N	N	O	N	N
Final	N	N	N	O	N	N	N	N	N	N	N	N	O	N	N
TTMA EXCRETED (z)															
Initial	33	65	40	68	38	40	32	35	44	33	40	34	62	67	36
Final	62	68	69	73	67	71	66	69	70	68	71	69	64	66	64
PARESTHESIAS (y) (Fingers and toes)															
Initial	F-O	N	T-O	T-O	T-O	F-O	F-O	T-O	F-O	T-O	T-O	F-O	T-O	T-O	F-O
Final	F-N	N	T-N	T-O	T-N	F-N	F-N	T-N	F-N	T-N	T-N	F-N	T-O	T-O	F-N

Initial*—concentration or value before onset of treatment.
Final**—concentration or value at end of study.
Phospholipid Phosphorus expressed as milligrams per cent.

(x)—N signifies normality; O signifies absence or marked diminution.
(y)—F signifies fingers; T refers to toes.
(z)—These figures represent percentage of choline ingested and excreted as TTMA.

present a less stormy course, and often, the disease is self-limited. However, this particular random group all had neuropathy, which insulin, alone, did not seem to ameliorate. Insulin plus the medication, however, did improve the neuropathy, and create a lower and better blood sugar stability.

Discussion The rationale for the diagnostic and therapeutic techniques enumerated previously was based upon several considerations. Csa'ky et al.,[2a] and Lundberg & Möllerstrom[2b] showed that some diabetics excreted abnormal amounts of urinary choline — over 5.0 mgs. daily, under standard dietary controls. These were a predominantly ketonuric, hypercholesteremic group. Best et al.[3] prevented the development of fatty livers in depancreatized dogs with choline. Paul et al.[4] improved the hyperlipemia of diabetics mellitus with choline. Conte Marotta[5] decreased the rate of ketone body formation in phloridzinized white rats with choline. Sirek[6] revealed a relationship between hypercholinuria, hypercholesteremia, hyperlipemia, and high blood phospholipids, ketonuria, and diabetic neuritis. Bonkalo[7] in evaluating diabetic neuritis, confirmed much of Sirek's work. Further, Pelner et al.[8] successfully treated 18 out of 24 diabetics with choline.

Our basis for the use of a lipotrope-vitamin-detergent mixture was its successful use as a decholesterizing agent in atherosclerosis.[9] The lipotropes have been shown by many investigators to be ameliorative in fatty infiltrative liver disease.[10,11] Alphatocopherol,[12] a detergent, has been shown to be a colloidal stabilizer and neurotropic vitamin.[13]

Summary Fifteen elderly neuropathic diabetics are presented. A classification, based upon choline excretion and hepatopathology, is discussed. A possible new approach at treatment is outlined.

Conclusions

Elderly neuropathic diabetics can be differentiated into hypercholinuric and normocholinuric groups. The former group may be significantly improved through the use of a lipotrope-vitamin-detergent combination.

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Procaine Penicillin in Scarlet Fever

A comparison of the effectiveness of continuous and intermittent penicillin was made by Mathieu, Mathieu, and West on 386 scarlet fever patients. The authors reported in *A.M.A. Am. J. Dis. Child.* [83:628 (1952)] that 300,000 units of procaine penicillin given intramuscularly once a day was as effecitve as 20,000 to 40,000 units of aqueous penicillin G given intramuscularly every 3 hours. The antibiotic was given for a period of 7 days in all cases. The authors pointed out that the relative mildness of scarlet fever in recent years and the high sensitivity of hemolytic streptococcus to penicillin have practically eliminated mortality and have reduced the incidence of complications.

The Alcoholic Personality

A Problem with Problems

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Within the columns of this publication, you, its readers, have been privileged to meet many eminent scientists whose findings and counsels have ushered in a brighter, happier day. Indeed, from month to month, the very life-blood of the master-spirits has seemed to pulsate through these printed words. Today, however, as one long-experienced in observing and treating pathological conditions, I shall introduce you to Citizen Q, or more accurately perhaps, to the semblance or shadow of what formerly was Citizen Q, for that individual whom I would have you visualize is ill. Yes, Citizen Q is an alcoholic. The muscle tone in this individual is lowered; his tissues are poisoned; his circulation is defective; his nerves are "shot;" his judgment is impaired; his gait is unsteady; his organs of digestion are subnormal; his place in society is forfeit; and his power of self control is *nil*. Twenty years ago Citizen Q was dapper and attractive and occupied a place of respect within the community. Today you pass him as he staggers on in quest of that alcoholic drink he is craving. The excess amounts of alcohol he has imbibed have changed the muscle cells of his heart to fat; his liver has cirrhosed; his elimination is faulty; and his body is now a prey to disease.

Look again, reader, at Citizen Q. It is he or his counterpart who occupies every fourth bed in mental hospitals today. It is Citizen Q and his kind who are responsible for one-third of the crimes of this nation, for broken homes, poverty, accidents, waste, and so on. Because the chronic alcoholic inflicts such a tragic mark upon American society today, alcoholism is a problem facing society in general, regardless of sex, occupation, wealth, education, family background or section of the country. Hence, Citizen Q is the responsibility of ministers, physiologists, physicians, educators, welfare officers, social workers and law enforcement officers and statisticians. It is with Citizen Q's court and jail situation, his traffic accidents, his neglect of family and job responsibilities, as well as his debts and economic burdens, that the entire community becomes necessarily involved.

Magnitude of Problem Among those who have reached the drinking age (fifteen years) in America, are to be found 67,000,000 users of beverage alcohol. Of this number, 94 per cent of the users suffer no untoward effects. Six per cent, however, are so physiologically, socially,

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and psychologically constituted that, having once begun to indulge in the drinking of alcoholic beverages, they continue to depend more and more upon the false support derived therefrom. Within this number are to be found 799,999 additional Citizen Q's who have reached the stage at which they are utterly incapable of handling alcoholic beverages to which they are now veritable slaves. Also included within the six per cent group are more than 3,000,000 drinkers who are experiencing both personal and community problems because they are indulging to excess. It is estimated that within time, 15 to 20 excessive drinkers out of every 1,000 will develop into chronic alcoholics. (Unfortunately, science, up to the present time, has been unable to predict which constitutions are likely to develop into chronic alcoholics.)

Approximately 87 per cent of the alcoholics are male drinkers, though within the past decade female drinkers have increased at a more rapid rate than have male alcoholics. The eminent research scientist, Dr. E. M. Jellinek, states that for every 100,000 adults in the United States, there are at present 3,960 alcoholics. Small wonder is it that the waste in human life, in disruption of family and of society is so frequent and that the loss in working days (22 annually for each problem drinker) is so great. An economic loss incurred through crime, hospital care, accidents, medical care, local jail housing of alcoholics and loss in wages amounts each year to approximately one billion dollars, yet Americans continue to spend almost 5 per cent of the annual income on alcoholic beverages. One of the large Northern cities ironically acknowledged recently that on one of its steady jail customers, who had intermittently passed seventeen years' confinement there, it had actually spent $7,500. But this multimillion dollar problem is fraught with gravity in not only dollars and cents but also in unclaimed lives.

Etiology Just as "the old order changeth," so have the concept of alcoholism and the approach to this baffling social problem also changed. Within recent years, research into alcoholism has resulted in a new concept by which society now views the unfortunate individual, addicted to the drink habit, as a very ill person in whom the ability to extricate himself from the clutches of alcohol is entirely lacking. The chronic alcoholic is believed to have possessed before his habituation a type of personality pattern which rendered him subordinate to society, and as a relief for the painful tension created thereby, the subject found his solution within the bottle. Thus did the alcoholic gratify his keenly-felt needs for achieving his goals or overcoming his feelings of inferiority.

Sometimes the individual experiencing a sociological problem uses the beverage as a sought-for escape from disagreeable factors in society. What part the physiological disorder plays in the role of alcoholism has not yet been determined by scientists who are continuing daily to explore this factor. Usually, the length of time required for converting an individual into a chronic alcoholic is fifteen to twenty years. The well-known Yale School of Alcohol Studies prefers to define alcoholism as "a complex progressive syndrome characterized by the chronic uncontrolled use of alcoholic beverages and by various symptoms of psychological, physiological, or social maladjustment."

Classification of Alcohol Users Some there are who indulge in drinking in order to become socially acceptable. Others deem alcohol acceptable for medicinal purposes, for ceremonial rites and social gatherings. To such people alcohol brings small harm. This is also true of the dietary drinkers who employ alcoholic beverages as a condiment along with their food.

The *periodic* drinker indulges at long intervals; the *steady* drinker, nearly every day. The intermittent one drinks for four

or five days, stops, then resumes.

Many neurotics (and neurotoids) resort to alcohol as a pain killer or to escape boredom.

The *inadequate* drinkers include the traumatic ones (those who turn to alcohol after some damaging experience such as loss or unfaithfulness of a mate, etc.), the stupid (morons who indulge through imitation), the economically insecure, the environmental (the ones who desire to get away from home and wend their way to the tavern), and the psychopathic personalities. Any or all of these neurotic or inadequate personalities are likely to become alcoholics or problem drinkers.

The *periodic* drinkers include the epileptic (and epileptoid) individuals, the cyclothymic personalities and those with glandular disorders, as well as the pseudo-periodic ones.

Other *excessive* drinkers include the social compensators, the occupational drinkers (traveling salesmen, for example), the week-end drinkers and the rough recreational ones. It is thus seen that in the large majority of these cases the individuals had experienced some personal conflict or anxiety, some factor of maladjustment, or some abnormality of personality for the solution to which alcohol seemed to be the answer.

Progressive Course Leading to Alcoholism Having experienced a perturbation of mind, the sick personality develops progressively through several stages of the deficiency disease known as *chronic alcoholism*. Probably he begins by drinking socially with a friend or a group. The frequency and amount of beverage increase gradually until he experiences a "blackout," in which an amnesia is present. The drink habit becomes more appealing, and the individual enters the "gulping" and "sneaking" stages. Since the drinking habit now means more to the individual than it formerly did, he realizes that he should curb or break it. If he tries, it is entirely possible to do so at this stage. If the reverse is true, the individual will discover, about two years after his first "blackout," that his drinking behavior is definitely getting out of hand. By overcoming an inferiority complex through drink the individual now begins to show off, spending large sums of money impractically and disproportionately. Before long, the drinker experiences feelings of guilt regarding his drinking and quickly assumes the defensive, always furnishing excuses, alibis and even falsehoods. Following this stage comes the desire to take a drink early in the morning (or upon arising), in order to get the day started, as he feels utterly unable to face his family or his job without his alcoholic crutch. At this stage the drinker is only strengthening self-deceit, for he contends that the drink will serve as a medicine for his depressed feelings. Drinking alone follows as the next step when the individual enjoys a flight from reality to fantasy. Then comes the stage of destructiveness (breaking chairs, smashing windows) and irritability, when he picks fights or perhaps strikes the child in his home. At this time he fears other people and imagines that they are highly critical of him. Drink has benumbed the higher faculties of his mind. This is an antisocial stage in which the drinker realizes that he is now inadequate. To meet his pressing needs, he resorts to more liquor. The individual has now developed into a compulsive drinker. He now goes on a bender, a period of several days when he drinks, drinks, drinks with no purpose other than to get drunk. All regard for home, job and family has gone. So has all sense of responsibility. To procure more liquor, the individual will stoop to lying or even stealing. Though he experiences remorse, he tries to tell himself that he has good reasons for drinking. Then he stops resenting himself and begins to resent others. At this time the drinker is beginning to suffer many physical complaints,—bad nerves, trembling hand, vacant stare. He zealously guards his whiskey, realizing that it is his all-important possession. Then

dawns that day when perhaps in an institution he wakes up while being treated for delirium tremens. Now only a shell of his former self remains. He has become a haggard, unkempt, twitching man in his late 30's (or somewhat older) and is powerless to help himself. Lost are his friends, his job, love, respect and home unless he turns to a psychiatrist, a minister or the AA's for necessary aid.

Since before the days of recorded history when man learned how to produce alcoholic drinks through the process of fermentation, the drinking habit has posed a baffling problem. The long, fruitless search of past ages to ascertain the common reason for all drinking had led to the conception of drinking as a matter of weakness of character. The modern concept that excessive drinking represents a type of illness and that the drinker represents an ill man has gained wide acceptance. On the other hand, however, it is true that this present day concept does not obtain in all cases of excessive drinking, and in order to set before the thinking public the importance of intelligent abstinence and self-restraint, it is necessary that this fact be emphasized.

Whether or not one holds specific reservations regarding the new medical concept, it cannot be denied that the excessive drinkers and the chronic alcoholics today are socially, physiologically and psychologically ailing and are no longer considered sinful and perverted individuals, unfit for social intercourse with their fellows and unworthy of pity and help.

Efforts to Meet the Challenge

Within America, where the highest percentages of alcoholism obtain, the pitiful plight of 800,000 Citizen Q's alone has become a menacing public health problem, as well as medical, educational, legal, industrial, religious, economic, safety and social problems. This country, infested at present with a larger number of cases of alcoholism than of tuberculosis, must meet the challenge of treating and of rehabilitating its alcoholics.

Perhaps no other agency for dealing with the problem of alcoholism has undertaken such a comprehensive program of research leading to prevention as has the Section of Studies on Alcohol of the Laboratory of Applied Physiology, Yale University. In the Yale Plan on Alcoholism, findings are set forth by researchers in the fields of sociology, law, psychiatry, physiology, history, economics, education, religion, statistics and psychology. A Yale Plan Clinic for diagnostic and therapeutic services to alcoholics and their families also is in operation in New Haven, as well as a Summer School of Alcohol Studies. In a few other large cities the Yale Plan on Alcoholism has been established. Centers for research into the problem are also being conducted at universities in New York, Virginia and Washington. Private industrial concerns, including Consolidated Edison, Eastman Kodak and Allis-Chalmers, are also instituting programs of research, rehabilitation and education in order to reduce the high incidence of alcoholism among their employees.

To the seventeen-year old organization, Alcoholics Anonymous, goes credit for bringing new hope to large numbers of alcoholics throughout the world. The activities of the organization are too well known, however, to need further treatment here.

Also operating in various sections of the nation today are out-patient clinics for alcoholics, as well as that impregnable organization, the Salvation Army, which has long given succor to the unfortunate victims of alcoholism.

The National Committee on Alcoholism sets forth in its constructive program the facts that the alcoholic is not past hope of recovery, is not a subject of scorn and debasement but that he is worthy of being helped and can be. Because alcoholism is a public health problem, the Committee considers aid to the alcoholic a vital public responsibility.

Since 1945, when the State of Connecti-

cut first organized its Commission on Alcoholism, many other states have followed her example. Through this Commission the problem of alcoholism is studied, clinics are set up, facilities for treating alcoholics and for instituting educational programs are provided.

Today many alcoholics are loath to be treated in institutions, for they are still laboring under the impression that it is a disgrace to be institutionalized for alcoholism, only to be discharged later, bearing a label for the rest of their lives. Herein lies a great need for public education which can do much toward eradicating the old taboos, stigmas and misconceptions.

Psychiatric and Biological Treatment of the Alcoholic The alcoholic, because of his personality pattern, frequently encounters difficulty in finding a hospital in which to secure his much-needed therapy. State hospitals are overcrowded; general hospitals do not want alcoholics; and even the private institutions find the alcoholics exceedingly difficult.

What is the personality pattern of the chronic alcoholic? Over the long period of time during which he has been drinking excessively, the alcoholic has grown irritable, this condition being due in part to his psychosomatic complaints. He is somewhat uncooperative when he is hospitalized, often inquiring, "Why do I have to do this?", or "Why doesn't So and So have to do that?" Alcoholics are narcissistic, desiring tokens of attention at all times. They are hostile toward their families, toward the hospital and toward the personnel and seem to think they have entered the hospital for punishment or because of a desire to please their families.

Alcoholics appear very immature, often acting like children rather than adults. They often disturb the hospital program by their refusal to participate or by their unfounded complaints. Alcoholics are gregarious in hospitals, though when they have occasion to disperse, they ridicule one another heartlessly. Many alcoholics are destructive with the hospital equipment and careless with cigarettes. The average alcoholic is given to deceiving and frequently resorts to lying. Very seldom is he satisfied with existing conditions for any appreciable length of time, and very seldom does he stick with an activity long enough to see it through to its conclusion. Because he has suffered a certain degree of brain damage through his continued use of a "poison," he unquestionably in frequent cases is somewhat deteriorated, as well as paranoid, believing that everyone "has it in for him." This brief word-picture of the chronic alcoholic should serve to impress one more emphatically with the importance of regarding the victim as a very ill patient in need of that particular therapy which will prove most effective for his recovery and rehabilitation.

Regarding therapies, it should be noted that because of the variety of complexes present in the person during his pre-alcoholic days, all therapies are not effective. Some, as it has already been noted, react favorably to the program of A. A. The decadent drinkers, the discordant ones (those who had built up dreams only to find that the world is different), the persons with inferiority complexes, also the traumatic drinkers, react favorably to A. A. On the other hand, those who are pampered by alcohol and take it in order to adjust, respond best to the conditioned reflex therapy or to the more recent treatment known as Antabuse (known also as the drug tetraethylthiuram disulfide, trade names for which are Abstinyl, Antalco, Refusal, as well as Antabuse.) To these two treatments the environmental drinkers likewise react favorably. For treating the moronic alcoholics, Antabuse is not effective.

Summary

It has long been concluded that unless an alcoholic actually desires to recover, it is useless to subject him to treatment. This view, however, according to the *Journal of Studies on Alcohol*, is being

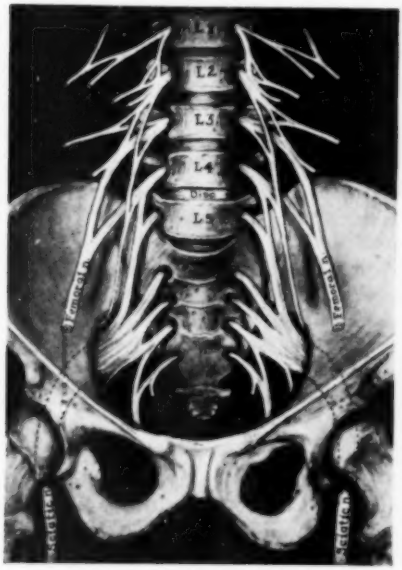
challenged today on the grounds that an ailing alcoholic shows an unwillingness to be cured or an inability to accept treatment perhaps only as significant parts of his illness. Some authorities today believe that alcoholics should, therefore, be forced to undergo the necessary treatment. In fact, in a few foreign countries where such a practice obtains, reports of successful treatment of involuntary patients have been received.

Though a remedial value has been observed in patients following the administering of certain drugs, and though some personality changes have been observed to start thereafter, it should be borne in mind that such drugs as emetine, apomorphine and Antabuse, each of which is being widely used at present, are not adequate in themselves to solve the problem of alcoholism but must be supplemented with effective psychotherapy.

Faced with the age old, yet baffling problem of alcoholism, America must hasten to revise her present state penal laws, many of which are antiquated and inadequate for a proper and more realistic handling of her alcoholic problems. Also must she revise her public health laws in many states. Better and more ample hospital and clinic facilities must she provide. Deeper research must she undertake and a broader program of education for acquainting both children and adults with the facts of alcoholism must she set up if she would more successfully combat the insidious enemy within her midst.

Clini-Clipping

Anatomical drawing of the lumbar region of the spinal cord showing the position of the sciatic nerve in relation to the vertebrae.



Anatomical drawing showing the relation of the sciatic nerve to the muscle of the right thigh (after Spalteholz).

From Larkowski and Rosanova's "Hospital Staff and Office Manual"

The Problem of the Neurotic Patient*

G. CON SMITH, M.D.
Mexia, Texas

Neurotic patients are like the poor, they seem to be always with us. This creates a problem for the busy practitioner who first sees most of these cases. Judging from the popularity of many of the irregular practitioners of the medical arts, the medical doctor may not be exercising proper methods in the care of the patient with a neurosis or functional ailment. Since entering general practice, I have become increasingly aware of the vicissitudes encountered in conducting a busy practice and still trying to allow sufficient time for the patient suffering from a neurosis or a psychosomatic complaint. The aggressive social movement as manifest in the recent trend of our American government has carried the physician right down the line without his complete awareness of it. Physician's offices are following the trend toward mass production. Thus in seeing the most patients in the shortest period of time, the physician may establish himself as objectively very successful. However, the physician who follows this procedure can do more harm to the professional status of medicine than all the Oscar Ewings, irregular practitioners, or other forces tending to disrupt orthodox, conscientious, and scientific medicine.

There is a tendency on the part of many physicians to dismiss the neurotic patient in the quickest and most convenient manner possible. This is somewhat easy to accomplish by creating a diagnosis based on the symptomatology the patient presents. After a quick explanation and a prescription or two, this patient is allowed to leave. In this way the physician uses the iatrogenic approach and creates disorders. The physician may rationalize his decision in conducting a case in this manner by his lack of time; or he may have done it so many times that he never thinks of it as procrastination and deception; or a compromise with conscience.

It is estimated that over half of the hospital beds in this country are filled with mental patients. Adolf Meyer postulated that many overt psychotic cases started many months or years earlier as an occult neurosis or a mild psychoneurosis. If this be true, it behooves the practitioner to practice the best preventive medicine he is capable of doing. Many physicians may ask what more specifically can be done for the neurotic patient?

In general, the answer to this question must include the physician's willingness to let the patient talk. This is the process much discussed as "mental catharsis."

* From the Brown Medical and Surgical Clinic.

There are many varieties of neurotic patients and one answer will not fit them all, but it is generally known that an understanding and uncensoring attitude of an unhurried physician is probably the best medicine for those suffering from anxiety, fear, hate, frustration, hostility, or resentment. This degree of psychotherapy is a tool which rightly belongs in the hands of the general practitioner. Doubtless the old family doctor used much of this same approach in his relation with the whole family in years past. It is fortunate that today our scientific knowledge of psychiatry better enables us to avoid certain pitfalls which were inevitable in the days of our horse-and-buggy predecessor.

A case history is herewith presented. A physician who carefully guides the flow of conversation will be impressed by the number of ideas which can be expressed in a short time.

Case: Mrs. A. G., age 26, married, with two children aged 4 and 2, entered the office in an apparently disturbed state. She made many meaningless and nervous motions with her hands and feet. The chief complaints were frequency of urination and pain in the lower abdomen. The illness dated back for twelve years, at which time she began to mentruate at the age of 14 with irregularity and pain. The patient complained of dyspareunia. Seven weeks previously she had a laparotomy with the removal of one salpinx and some "cysts." She had been told on her rounds of the doctors that she had kidney trouble, gynecologic trouble, low blood pressure, and anemia; one doctor had told her she was just nervous. The operation did not help her complaints. Physical examination revealed no significant abnormality. A well healed incision was present in the lower part of the abdomen. The patient was somewhat skeptical about a "talking" kind of treatment. She had been very attentive when I attempted to explain some of the emotional aspects of illness. A further interview at an hour more accommodating to me revealed that she had had a very unhappy childhood, going from one relative to another. Her father and mother had died when she was of preschool age. She had never known love and had been reared in an atmosphere of economic insecurity. Her education was incomplete and afforded her limited opportunity. She married after a three-day courtship and found little more in her marriage than she had had before. After the third interview, she said that she was feeling much better. A total of five hours at eight separate interviews was accorded this patient.

It is important to remember not to hurry the mental catharsis of the patient too much. A physician may see very quickly the initial conflicts and resolve them verbally for the patient. It is better to allow the patient to arrive through the process in his own manner. The physician may tactfully guide the patient's course back to the contributory phases or processes. It is only when the patient mentally follows a course of resolving his own problem that full awareness and realization can be accomplished. This insight will come to the patient if the role of the physician is as an intermediary tool for the patient's expression.

A functional diagnosis which comes from the exclusion method of diagnosis is sometimes necessary. However, the pattern of functional disease is often so typical that such exclusion is unnecessary. Once the diagnosis of neurotic illness is established the physician should try to interview the patient away from his desk. The face behind the desk may create for the patient a visual image of being judged. This will impede the progress of the interview.

Naturally it is only wise to select the patients who really want help. Reward may never be great. Yet there is a personal triumph in saving a patient from

the charlatan or diverting him from the ambitious efforts of some overzealous colleague who pursues a very remunerative livelihood by practicing radical or unneeded surgery.

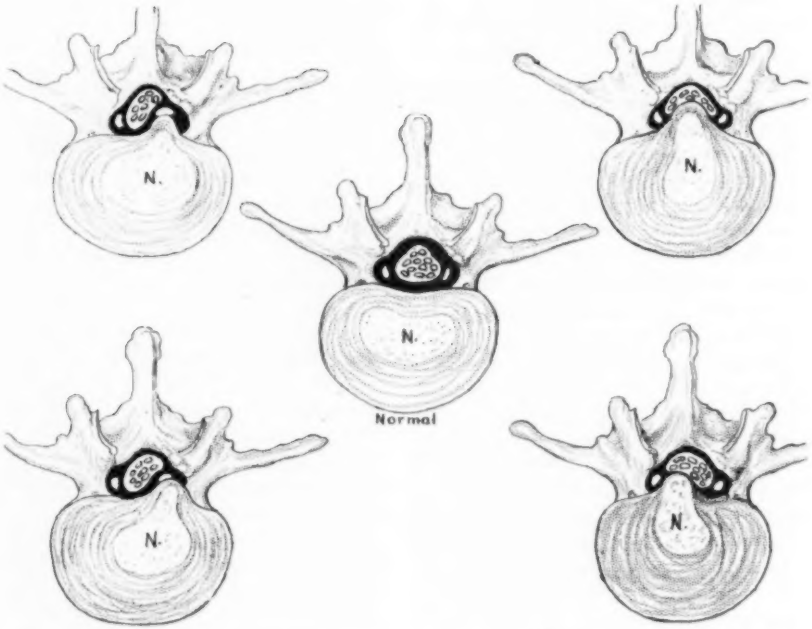
Many patients will not seek advice from a psychiatrist. Often there is no psychiatrist in many miles for patients in need of nervous treatment. The medical practitioner must accept the demand and begin to satisfy the need for emotional relief of disturbed and anxious people. Although physicians have become somewhat adept in treating pneumonia and appendicitis, the great volume of the people we see receive little or no benefit.

Summary

1. The medical practitioner must be impressed that a busy practice can be compatible with the practice of psychotherapy.

2. The general practitioner is implored to recognize and meet his responsibility in dealing intelligently with emotional sickness.

216 North Sherman Street



Pathological variations of the ruptured intervertebral disc as compared with the normal position.

From Larkowski and Rosanova's "Hospital Staff and Office Manual"

Infant Care

Prematurity and Premature Infant Care Programs in Colorado

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Denver, Colorado

Maximum maternal health and minimal occurrence of prematurity and fetal and neonatal mortality rest upon the same three essentials—complete prenatal guidance and care; facilities and personnel for all needed standard and special services for delivery, postnatal, and newborn care; and adequate follow-up care for both mothers and babies. Hence the programs of the Colorado State Department of Public Health for maternal health and premature infant care are closely interwoven. The activities are conducted as integral parts of the basic health services of the state and local health departments, in continuous cooperation with the practicing physicians and medical institutions. Special emphasis is given to prematurity because of its predominance as a cause of infant deaths.

Development of programs for prematurity prevention and premature infant care has been facilitated at the local level in recent years through expansion and strengthening of local health departments. Today five single-county and four multiple-county local health units, including the Denver Health Department, serve 21 counties embracing two-thirds of the population of the total 63 counties of the state. When established in July 1952, an additional city-county department, recently authorized by city charter amendment for the second most populous county, will raise the population coverage to three-fourths of the state total. Full-time public health nurses are paid from State Health Department and county sources in about one-third of the unorganized counties, and the Department also provides many types of direct services throughout the state.

Infant Mortality Attributable to Prematurity

Although continuous, the progress in saving infant lives has been only gradual in recent years both in the United States as a whole and in Colorado, as indicated by the infant mortality and neonatal mortality rates for the five-year period 1946-1950 presented in Table 1. Accelerated measures to prevent deaths from prematurity are essential if the rates are to be substantially reduced in the future, because this condition is by far the leading cause of death under one month of age and also under one year.

Medical Certifications Immaturity, a term now used synonymously for prematurity, was the sole or principal cause of 23 per cent of the infant deaths under one year of age in the United States in 1950 and 1951, according to physicians' statements on the death certificates as tabulated by the National Office of Vital Statistics from 10-per cent samples of the certificates for each year. For purposes of statistical classification, immaturity and

* Executive Director, Colorado State Department of Public Health. Prepared May 1, 1952, for publication in Medical Times.

prematurity are jointly defined as follows:

Immature (premature) infant.—An immature infant is a liveborn infant with a birth weight of 5½ pounds (2,500 grams) or less, or specified as "immature." If weight is not specified, a liveborn infant with a period of gestation of less than 37 weeks or specified as "premature" may be considered as the equivalent of an immature infant for purposes of this classification.[1]

A detailed statistical analysis of the 1,158 deaths occurring in 1950 among infants of Colorado residents showed that 16.2 per cent of the fatalities under one year of age were attributable to immaturity as the sole or principal cause, according to the death certificate information by the physicians. In another 30.5 per cent of the deaths, immaturity was mentioned as a cause subsidiary to other diseases peculiar to early infancy. The total 46.7 per cent is exclusive of many additional instances of immaturity subsidiary to congenital malformations, certain diseases, accidents and other conditions for which immaturity involvement was not coded for tabulation. The proportion of deaths associated with immaturity, as the principal or a tabulated subsidiary cause, was about one and one-half times greater for infants dying under one month of age than for the total infants succumbing under one year. The comparative statistics are shown in Table 2.

Table 1

INFANT DEATHS PER 1,000 LIVE BIRTHS

Year	United States		Colo. Residents	
	Under 1 Year	Under 1 Month	Under 1 Year	Under 1 Month
1946	33.8	24.0	40.0	27.2
1947	32.2	22.8	37.5	25.4
1948	32.0	22.2	38.4	24.3
1949	30.8	20.8	34.9	24.2
1950	28.7	20.1	34.2	23.4

All rates for 1946-1948 are final figures published by the National Office of Vital Statistics. The rates for 1949 and 1950 for the United States are provisional figures by the National Office of Vital Statistics based on 10-per cent sample studies; and those for Colorado are provisional figures based on State Department of Public Health tabulations.

Birth Certificate Weights Immaturity among resident Colorado infants also was studied from tabulations of the live births in 1950 according to weight, and from tabulations of the infant deaths in 1950 according to birth weights obtained by matching the death certificates with the corresponding birth certificates. The latter type of tabulations was started by the Records and Statistics Section in 1949.

Eleven per cent, or 3,706, of the 33,853 resident infants born in 1950 weighed 5½ pounds or less and, therefore, were classifiable as immature. Tabulations from the

Table 2

BROAD CAUSES OF RESIDENT INFANT DEATHS, COLORADO, 1950

Sole or Principal Cause	Deaths Under 1 Year of Age		Deaths Under 1 Month of Age	
	Number	Per Cent	Number	Per Cent
All causes	1,158	100.0	791	100.0
Diseases peculiar to early infancy*	684	59.0	666	84.2
Immaturity, unqualified	188	16.2	187	23.7
Others, with immaturity mentioned as a subsidiary cause	353	30.5	345	43.6
Others, without mention of immaturity	143	12.3	134	16.9
Congenital malformations	139	12.0	90	11.4
Diseases of the respiratory system	143	12.3	6	.8
Diseases of the digestive system	93	8.1	8	1.0
Accidents, all forms	38	3.3	5	.6
Parasitic and infective diseases	30	2.6	3	.4
All other causes	31	2.7	13	1.6

*The diseases classified as principal causes under "Diseases peculiar to early infancy" include: Immaturity unqualified or with a cause secondary to it, birth injuries, postnatal asphyxia and atelectasis, pneumonia of the newborn, diarrhea of the newborn, sepsis of the newborn, antenatal toxemia, hemolytic diseases of the newborn, hemorrhagic disease of the newborn, nutritional maladjustment, and ill-defined diseases of early infancy.

infant death certificates for 1950 matched with birth certificates showed that about 60 per cent of the deceased infants under one year of age and about 75 per cent of those under one month old weighed 5½ pounds or less at birth. When the 1,061 resident infant deaths for which birth weights could be ascertained were analyzed according to age at death, a striking relationship between small size and brief survival appeared. The relationship was most clear-cut as to expiration the first day but also was apparent regarding deaths in the first hour and in the first week and first months. Facts such as these imply the great importance of early and continuous prenatal supervision and of foresight in arranging for the special obstetric and pediatric care which may be needed for both mother and infant in case of premature delivery. Details from the 1950 mortality study are given in Table 3 and are presented in graphic form.

Integrated Maternal and Premature Infant Care Programs

The Colorado programs for reduction of prematurity and of mortality among pre-

PERCENTAGE DISTRIBUTIONS OF INFANT DEATHS BY LENGTH OF SURVIVAL ACCORDING TO BIRTH WEIGHT

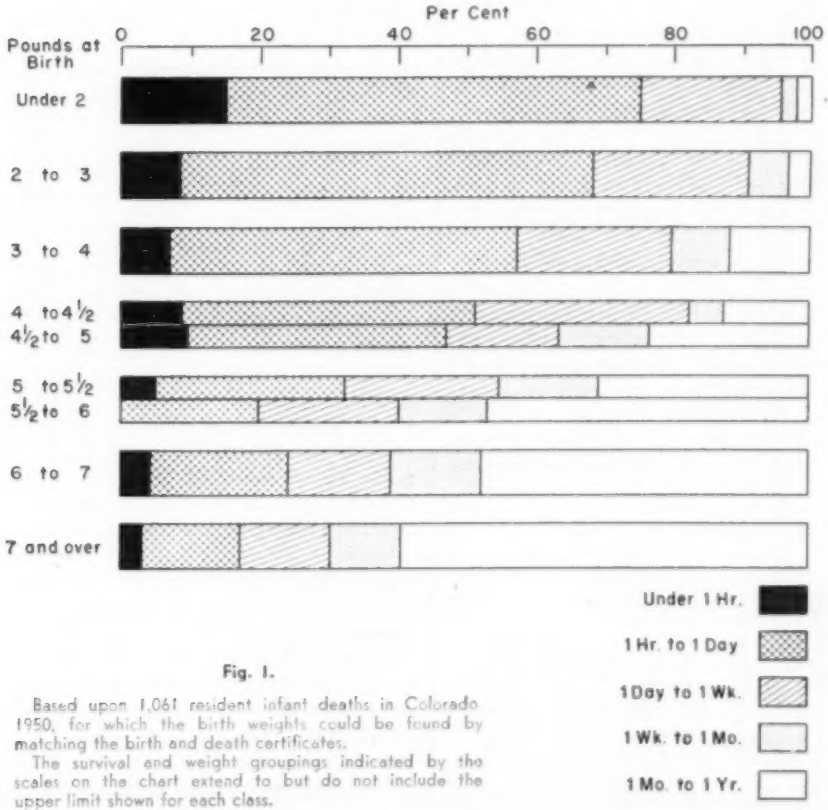

Fig. 1.

Based upon 1,061 resident infant deaths in Colorado 1950, for which the birth weights could be found by matching the birth and death certificates.

The survival and weight groupings indicated by the scales on the chart extend to but do not include the upper limit shown for each class.

Table 3

PERCENTAGE DISTRIBUTIONS OF INFANT DEATHS BY LENGTH OF SURVIVAL, ACCORDING TO BIRTH WEIGHT
1,061 Deaths of Resident Infants of Known Birth Weight, Colorado, 1950

Weight at Birth	Total Deaths Under 1 Year		Age at Death — Per Cent				
	Number	Per Cent	Under 1 Hour	1 Hour to 1 Day	1 Day to 1 Week	1 Week to 1 Month	1 Month to 1 Year
Total deaths of known weight	1,061	100.0	7.0	35.9	19.6	8.9	28.6
Under 2 lbs.	148	100.0	16.2	59.4	21.6	1.4	1.4
2 lbs. - 2 lbs., 15 oz.	133	100.0	8.3	60.1	23.3	6.0	2.3
3 lbs. - 3 lbs., 15 oz.	132	100.0	7.6	49.3	22.7	8.3	12.1
4 lbs. - 4 lbs., 15 oz.	125	100.0	8.8	40.0	25.6	8.0	17.6
Under 4 lbs., 8 oz.	71	100.0	8.4	42.3	32.4	4.2	12.7
4 lbs., 8 oz. and over	54	100.0	9.2	37.0	16.7	13.0	24.1
5 lbs. - 5 lbs., 15 oz.	150	100.0	2.7	24.0	21.3	11.3	40.7
Under 5 lbs., 8 oz.	77	100.0	5.2	27.3	22.1	14.3	31.1
5 lbs., 8 oz. and over	73	100.0	—	20.5	20.5	8.2	50.8
6 lbs. - 6 lbs., 15 oz.	185	100.0	4.3	20.0	14.6	13.5	47.6
7 lbs. and over	188	100.0	3.2	13.3	12.8	11.2	59.5

matures have six major aspects. These are: (1) maternal and infant health guidance and supervision by the state and local health departments in cooperation with the practicing physicians; (2) a Premature Infant Care Center and associated Maternity Care Project at Colorado General Hospital in Denver, aided by special grants from the United States Children's Bureau; (3) basic, graduate, and postgraduate training of professional personnel in prematurity prevention and premature infant care by the Center and the State Health Department; (4) research at the Center; (5) field studies; and (6) review of vital records, combined with case analysis through conferences with physicians and hospitals.

Maternal and Infant Health Supervision The state and local health departments emphasize early prenatal care by the family physicians and prenatal, postnatal, and infant referrals for public health nursing or clinic guidance. Services of the State Health Department's maternal and infant health consultant team are available to all physicians and clinics. The team—composed of the Maternal and Child Health Chief and the Obstetrics, Pediatrics, Maternity and Infancy Nursing, and Medical Social Consultants — work closely with the State and County Medical Societies and with the University of Colorado Medical Center.[2] The Obstetrics Consultant and the Pediatrics Consultant, who also are on the staffs of the Premature Infant Care Center and Maternity Care Project, serve the State Health Department and the University Medical School jointly.

Prenatal clinics are operated by the Denver Health Department and other organized local health departments. Home visits are made by the public health nurses to prenatal, postnatal, and infant patients referred by private physicians, the public health clinics, the Premature Center, or the Maternity Care Project.

Forty-five state-owned incubators for

prematures have been made available to physicians and hospitals by the State Department of Public Health. Ten handportable incubators are located in the various local health departments. These are used primarily for transporting prematures to general and surgical hospitals, a service in which the public health nurses assist both directly and through teaching. Thirty-five hospital-type incubators are kept in two pools, one at the Premature Infant Care Center for distribution to hospitals throughout the state upon emergency request, and the other at the Denver Health Department for distribution to Denver hospitals as needed.

The public health nurses provide group teaching in many communities through classes for expectant mothers, newly delivered mothers in hospitals, and other interested persons. Recently the State Health Department's consultant team on maternal and infant health surveyed services to mothers and infants at an Army base hospital and an Army general hospital, in cooperation with Army officials and local health department personnel. As a result, the local health departments concerned have arranged to have complicated pregnancies and premature infants referred by those hospitals for public health nursing services, and are including the wives of servicemen in the mothers' classes. Organization of additional mothers' classes, conducted by local nurses or other suitably trained individuals, is being stimulated in all areas by the State Consultant in Maternity and Infancy Nursing.

Premature Infant Care Center Statistical studies of the causes of infant deaths by the State Health Department, Medical Society, and Medical School in 1945 highlighted the magnitude of the prematurity problem. Ways of lessening the infant death toll assignable to this cause were considered with the Children's Bureau in 1946, and in 1947 the Premature Infant Care Center was established with financial assistance by the Bureau. The purposes of the Center are:

To provide expert care for premature infants born in Colorado General Hospital or referred to it from a reasonable distance.

To provide special training for graduate and basic student nurses, medical social workers, physicians, residents, and medical students in both the obstetric and pediatric aspects of the problem.

To conduct research on the causes and prevention of prematurity, methods of care of prematures, teaching methods, and standards suited to the needs of both urban and rural hospitals and communities.

In addition to the delivery and premature nursery care available to the Center, the services include transportation of prematures within a radius of 35 miles of the Center, retrolental-fibroplasia clinic services, well-baby clinic check-ups for the medically indigent, and follow-up by public health nurses and medical social consultants. Private patients are referred

Table 4

DISTRIBUTION OF SURVIVING PREMATURE INFANTS AND THEIR DAYS OF HOSPITALIZATION BY ADMISSION WEIGHTS, PREMATURE INFANT CARE CENTER, DENVER, JULY 1, 1950 - JULY 1, 1951

Admission Weight	Surviving Infants		Days of Hospitalization		Average Days of Stay
	Number	Per Cent	Number	Per Cent	
All surviving infants	223	100.0	7,029	100.0	31.5
Under 1,000 grams	12	5.4	1,052	15.0	87.7
1,000 - 1,500 grams	44	19.7	2,860	40.7	65.0
1,500 - 2,000 grams	74	33.2	2,228	31.7	30.1
2,000 - 2,500 grams	92	41.3	885	12.6	9.6
2,500 grams	1	0.4	4	0.05	4.0

back to the private physicians.

In most instances the premature infant services by the Center are provided babies for whom this costly type of care otherwise might be unobtainable. The State Health Department pays Colorado General Hospital on a fixed per diem rate equal to about one-half the estimated cost of the care. No charges are made to the families, but those able to do so are permitted to reimburse the Department in whole or in part. Since the development of this program, the Colorado Blue Cross has modified its comprehensive insurance policy for families to include hospital care of premature infants.

During the fiscal year July 1950 to July 1951, 273 premature (immature) infants received medical and hospital care in the 20-bed unit at the Center. More than one-half of the babies, 56 per cent, were born outside of Colorado General Hospital. One-hundred per cent occupancy was achieved by permitting the more vigorous prematures to be kept in the full-term nursery, from which they may go to breast and also be sent home with their mothers if the home conditions are satisfactory. "Aside from permitting more complete occupancy, this is considered to be sound medical care for both mother and baby," the fiscal-year report of the Center states.[3] In spite of this efficiency, it was impossible to accept immediately all referred babies. As in previous years, therefore, the policy was to admit those prematures least likely to receive specialized care elsewhere.

The average length of stay for the 223 survivors during the fiscal year 1950-1951 was 31.5 days, and ranged from 4.0 days for the one baby with an admission weight of 2,500 grams to an average of 87.7 days for the 12 babies weighing less than 1,000 grams on admission. The average days of care according to admission weight are shown in the last column of Table 4. The percentage distribution of the total days of care received by the 223 infants according to admission weight, when compared with the percentage distribution of the babies by admission weight, shows the proportionately smaller volume of care provided the larger babies. For example, only 12.6 per cent of the total hospital days were provided the babies weighing between 2,000 and 2,500 grams on admission, although this group represented 41.3 per cent of the 223 patients. Conversely, 40.7 per cent of the hospital days were devoted to the prematures weighing 1,000 to 1,500 grams on admission, who comprised only 19.7 per cent of the total number of infants. The relative differences reflect efforts to furnish care primarily to small infants and avoid wasting specialized services on larger ones not requiring them. The average weight of the survivors, on discharge, was 2,427 grams. Follow-up services by public health nurses and medical social consultants assisted greatly in reducing the length of hospital stay.

For infants who died, the average hospital stay was 3.4 days.

Maternity Care Project In July 1950, a Maternity Care Project was initiated at the Premature Infant Care Center, the objectives being:

To prevent premature delivery.

To provide better care for mothers with complications of pregnancy.

To provide special training for medical and nursing personnel in the prevention and control of complications of pregnancy.

To conduct research.

The major medical indications for admitting a patient to the Project are toxemia of pregnancy and other conditions predisposing to premature labor such as vaginal bleeding, genito-urinary infections, essential hypertension, rheumatic heart disease, and twin gestation. The State Health Department pays Colorado General Hospital for the care of these selected cases in a manner similar to that described in relation to premature infant care. A nutritionist and a medical social worker on the Project staff cooperate with local

public health nurses and social workers. A public health nurse with special training in maternity nursing may be added to the Project personnel in the future.

During the fiscal period July 1950-July 1951, 124 patients were placed on the Project. Among them, the most frequent complicating condition was pre-eclampsia, 28 cases or 22.6 per cent. Next most frequent were spontaneous premature rupture of the membranes, 16 cases or 12.9 per cent; and pyelitis and hyperemesis gravidarum, 13 cases each or 10.5 per cent each. It was noted that in most of these types of complicated cases the babies were small or premature.

Professional Training and Postgraduate Education The purpose of the special obstetric, pediatric, nursing and other ancillary training at the Premature Infant Care Center and in the Maternity Care Project is to prepare professional personnel to contribute to the care of premature infants and complicated pregnancies in other hospitals and communities, rural as well as urban, in Colorado and other states of the region. The training programs are integrated with the Medical School courses for basic medical students and for residents in obstetrics, pediatrics and general practice. For residents in the third group, experience in general medical clinics is available in several hospitals of the state.

Refresher courses for practicing physicians and other medical and health workers of the region are conducted cooperatively by the Medical School and State Health Department. For example, a four-day institute on the care of prematures was held at the Medical School in February 1951 for all types of professional workers interested in the problem. In April 1952, a two-day graduate institute for physicians was held on problems met in the general practice of obstetrics and gynecology and on aspects of the specialty related to maternal, fetal, premature, and other newborn mortality.

During 1950-1951, the University of Colorado School of Nursing offered twice yearly a concentrated three-week academic course for graduate nurses, followed by a three-week practical course on care of prematures; and also less intensive courses. The plan for the future is to offer, quarterly, a four-week course devoting about one-half of the time to practice in the care of the premature and the other one-half to academic studies.

Research at the Premature Infant Care Center Numerous studies are conducted at the Premature Infant Care Center and the associated Maternity Care Project.[4] Those made during the past two years included the following, among others:

Studies on self-regulation of feeding of prematures.—Observations on the intervals chosen by infants on demand feeding and adjustment of nursing schedules accordingly.

Investigation of retrolental fibroplasia.—Extensive research on the incidence and care of the disease; including study of results of treatment of the early phases with ACTH and cortisone and results of oxygen therapy. Information from many medical centers is being pooled.

Dietary studies by the Maternity Care Project.—Dietary interviews, histories, and evalutions by the Project nutritionist, for comparative studies from year to year which will provide valuable information regarding nutrition in complications of pregnancy.

Studies on uterine motility and on hormone metabolism.—Series of studies regarding abnormalities of uterine contractions during pregnancy which may be related to premature delivery; and abnormalities of steroid hormones of pregnant women in relation to uterine contraction patterns and premature delivery.

Studies on the effect of gases on fetal lungs.—Research related to respiratory failure in premature deaths through clini-

cal studies and animal experimentation on the causes of the hyaline-like membrane which lines the pulmonary alveolar spaces in a large proportion of the respiratory-failure deaths.

Blood oxygen saturation studies on premature infants.—Studies on the effect of prematurity on blood oxygen saturation during the early neonatal period.

Field, Facilities and Standards Studies Prematurity and premature infant care also have been considered in field studies, in formulating general standards of nursing and hospital care, and in planning hospital facilities. For example:

From time to time the State Health Department's team of maternal and child health consultants arrange with the local medical societies, health departments and other interested groups to study the special needs of particular hospitals, communities, or areas.

The Pediatrics Consultant serving the State Health Department and the Premature Infant Care Center conducts monthly meetings of persons, from several parts of the state, who participate in the care of prematures. The meetings have helped considerably to crystallize the methods and techniques of care.

In 1951 a joint committee from the State Health Department and League of Nursing Education contributed toward better premature care by preparing a "Guide for Safe Obstetrical and Newborn Nursing Care" and distributing it to all hospitals and public health nurses in the state.

Revised standards for hospitals, adopted by the State Health Department in 1951, for licensing and guidance purposes, also have fostered improved facilities, equipment, and practices.

Generous grants from the W. K. Kellogg Foundation to the State Health Department in the past year have made possible community studies and expert consultation on hospital administration and diagnostic services.

Advisory services on hospital planning, construction, and equipping, and federal aid under the Hill-Burton Act have resulted in improved and additional maternity and newborn facilities.

Vital Records Review and Related Case Analysis When the Vital Statistics Unit of the State Health Department receives a death certificate involving pregnancy, a copy is sent to the Obstetrics Consultant. He then writes or consults the physician. After the case history and all examination, laboratory, and postmortem reports have been studied, a discussion of the management of the case is prepared for publication in the *Rocky Mountain Medical Journal* through the cooperation of the Maternal and Child Health Committee of the State Medical Society.

Recently the Maternal and Child Health Committee of the State Medical Society and the Obstetrics and Pediatrics Consultants of the State Health Department have been developing plans for proposed Fetal and Maternal Mortality Conferences to be held monthly in the hospitals of the state by committees of local physicians appointed by the county medical societies. Such monthly conferences already are being held in three of the larger hospitals in Denver. The purposes are to study the deaths occurring in the preceding month, to consider the chain of events leading to the fetal, infant, or maternal death, and to recommend preventive measures.

Both detailed annual analyses and trend studies are made by the State Health Department from the birth, infant death, and maternal death statistics. To facilitate research in this field, the Department is considering a fetal death certificate to replace the stillbirth certificate now in use.

Adoption of the World Health Organization definition of a fetal death is proposed both for the fetal death reporting and for the hospital conferences and the case analyses.

Joined Forces for Future Progress

Integration of state and local services and cooperation between health departments, hospitals, and private practitioners are the means to better health protection in our communities. Such a joining of forces can be well illustrated by a research and planning program developed during 1951 and 1952 in one of the Colorado towns at very high altitude.

State Health Department analyses of the vital statistics for 1949 and 1950 indicated that prematurity is unusually common in the particular town and county. Successive conferences, therefore, were held by the Department's maternal and infant health consultants directly with the local medical society, hospital officials, public health nurse, and other community representatives, there being no organized local health department for the area. The conference brought three promising results:

A State Health Department and Medical School field research project, conducted in the spring of 1952 with the approval of the County Medical Society.—A study, by a physician, regarding all aspects of reproduction, maternal and infant health, and mortality among mothers and babies through interviews with the mothers and information from the physicians and the hospital serving the town and county.

A study of nutrition, conducted by the State Agricultural College concurrently with the Health Department and Medical School research project.—Collection and evaluation of the dietary histories of the mothers and study of related problems by a nutritionist.

Improved hospital practices related to obstetrical and newborn care, and elimination of building hazards.—Changes made in conformity with recommendations by State Health Department consultants who toured the hospital and observed methods of care, fire hazards, and other conditions.

Were there an organized local health department for the area, such guidance could be more immediate and continuous.

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4. Additional discussions and bibliographic notes are presented in the Annual Report, July 1950-July 1951, op. cit.

Note.—Special acknowledgments are due the following State Department of Public Health staff for materials and consultation provided in the preparation of this report: Charles H. Dowding, Jr., M.D., Chief, Maternal and Child Health Section; John A. Lichty, M.D., Pediatrics Consultant; and Paul D. Bruns, M.D., Obstetrics Consultant. Doctor Lichty and Doctor Bruns also are Associate Professors, respectively, of the Department of Pediatrics and the Department of Obstetrics and Gynecology, University of Colorado School of Medicine, and are on the staffs of the Premature Infant Care Center and Maternity Care Project.

State Office Building

Bleeding Peptic Ulcer

LINDON LEE DAVIS, M.D.
Williston Park, N. Y.

Our present problem for discussion is massive gastrointestinal hemorrhage, from gastric or duodenal ulcer. So much of the literature is vague with regard to the *definition* of massive gastrointestinal hemorrhage, that I should like to define what I am going to speak about. We are discussing an episode of bleeding, from gastric or duodenal ulcer, in which the patient shows evidence of *shock*, with a Hgb. below seven grams and a Rbc. below three million. From the title of our subject, it is obvious that we have already made a diagnosis of ulcer as the etiological factor by exclusion, or previous ulcer history, or by x-ray studies in the active phase of bleeding.

Inasmuch as it is generally agreed by workers in this problem that these cases must be treated individually, and watched closely throughout their course, preferably by the same individual or individuals, and that the exact method of handling these cases varies with each institution and with each individual, it is impossible to lay down a definitive method of treatment. However, a careful study and a comparison of reported cases warrant certain observations. These observations have been summed up as follows:

1. Bleeding occurs as the first symptom of ulcer in 16% of cases.

2. The massive bleeding episode itself accounts for an appreciable mortality. This varies somewhat according to the method of treatment, being somewhat higher as would be expected in cases treated as we used to several years ago, where it was thought that if we let the patient bleed long enough the lowering of the B/P would aid in hemostasis. This method allowed the unfortunate patient to spend considerable time in a hypoxic state. More about this in a moment.

3. The first hemorrhage is most severe and has the highest mortality.

4. Subsequent massive hemorrhage occurs in 60 to 75% of all cases. It occurs in 98% of patients over 45 years of age. Recurrent hemorrhages are somewhat less apt to be fatal, as seen here. I think age differentiation should refer not to the patient's chronological age, but to the condition of his arteries, the point being that recurrent bleeding is much more frequent in patients with hardened, sclerotic, less retractile vessels.

5. The majority of deaths occur over 50 years of age.

6. Bleeding tendency is about the same in duodenal and gastric ulcer. Massive hemorrhage from gastric ulcer has twice the mortality.

7. In duodenal ulcer with both hematemesis and melena there is a more grave prognosis than with melena alone. Hematemesis is more common with gastric ulcer. Melena without hematemesis is more common in duodenal ulcer.

8. Persistent or rapidly repeated bleeding raises the mortality sharply.

9. Three general methods of treatment:
   A. Treat all medically.
   B. Treat all by immediate surgery.
   C. Select for operation only those whose bleeding is not arrested by medical management.

I will first make a comment with regard to Point "C" and then outline medical management. Of these patients treated medically about 10% of those with massive hemorrhage die. If we are to save the lives of these 10%, we must try to recognize which cases are going to continue to bleed or to have rapidly repeated hemorrhage, and it is in this group that surgery must be used. Of surgery I will say only that the time to operate would seem to be that Golden Hour when, following hemorrhage and the immediate treatment, the patient improves and seems to level off with control of shock and perhaps cessation of bleeding. The problem of recognition of continued or repeated bleeding is handled by repeated blood examinations, by frequent B/P readings, and frequent recording of the pulse. A patient receiving transfusions where the pulse can not be brought down and kept below 120 and in which the systolic B/P can not be maintained above 100 is in serious difficulty with continued bleeding and is a candidate for emergency surgery.

As to the medical management of massive bleeding, there are two matters of extreme importance; first, the recognition of continued or recurrent bleeding and secondly, blood replacement. It has been estimated by Dr. Richards in his work on shock that a patient approaching shock will need approximately 2,000 cc.'s of blood as an *initial* infusion, and I think that we should continue to regard this as a *minimum* figure. We have every reason to believe that the patient should receive sufficient blood to keep him out of shock whatever the quantity needed, or epinephrin added to the transfusion may be of help here. There is no basis for the belief that large transfusions will blow the clot out of the eroded vessel. It is not generally appreciated that what kills the patient is not lost blood per se, nor circulatory failure which theoretically commences when the Hgb. falls to five grams, but the lethal agent is the anoxia which results from blood loss. Not only does tissue anoxia so alter the clotting mechanism as to make arrest of hemorrhage difficult or impossible, but it so depresses the body physiology as to make it impossible for a patient to stand surgery. It is important, therefore, that we discard the idea of giving a certain number of bottles or units of blood. I think we have been somewhat handicapped in this problem by the fact that blood is stored in 500 cc. bottles.

Many feel that an indwelling intestinal tube is most helpful for two reasons; first, it allows a continuous instillation of a *clear* buffering solution for neutralization of gastric acidity and allows frequent aspiration for the determination of further bleeding. These workers feel that these advantages more than offset the theoretical dangers of intubation. Some doctors like to have the tube in the duodenum in duodenal ulcer cases, for frequent sampling for continued bleeding. The most critical period for recurrent bleeding is the first seventy-two hours. Having survived this period (always with one to two quarts of blood on hand) the patient may be continued on regular ulcer therapy. This ranges all the way from the old Sippy routine, or continuous intragastric drip, to Meulengracht diet.

Finally, what advice shall we give a patient who has reached this point.

Generally my recommendations follow:

1. In cases with good arterial systems under age 40 in which this is the first episode of bleeding the treatment is continued medical care.

2. In the same situation in which this episode is a recurrence of bleeding the treatment is surgery.

3. In cases of sclerotic patients or those above 40-45 years the treatment is interval gastrectomy.

101 Hillside Avenue

Panel Discussion before Associated Physicians of Long Island at Nassau Hospital meeting June 4, 1952.

The Autonomic Nervous System in Rheumatoid Arthritis

A Preliminary Report on the Use of D.H.E. —45†

NATHAN SUSSMAN, M.D.*
Harrisburg, Pa.

In recent years tremendous strides have been made in our knowledge of rheumatoid arthritis. Nevertheless we are still faced with a large gap in definitive information as to its etiology, pathogenesis, and the mechanisms whereby remissions occur. Until now experience has shown that remissions may result from ACTH, cortisone, gold, jaundice, pregnancy, and at times with transfusions, and on occasions it will occur spontaneously. Thus the question arises as to whether one common factor or several remission factors exist. To answer this the problem has to be considered from several aspects. For example it can be studied at the local cellular level (post-adrenal); the preadrenal level; the pituitary level; the hypothalamic and autonomic nervous system level; and the metabolic level. Since so many avenues are available for investigation, it is possible that the remission factor is initiated at different points for different individuals. Therefore the search for a factor common to all remissions and the etiology of this disease must include that part of our anatomy and physiology which contributes to our total homeostasis. This approach will automatically include the nervous system, especially the components of the autonomic nervous system.

To substantiate such an hypothesis there is enough evidence in the clinical and pathological findings justifying an evaluation of this disease entity from such a viewpoint. Of course in the final analysis the entire picture will depend on the harmonious integration of the autonomic nervous system with the pituitary-adrenal axis and the probable chemical and enzymatic changes at the cellular level.

Several investigators[1, 2] have already considered the role of the nervous system in rheumatoid arthritis because of the usual symmetrical involvement; pain along the course of nerves; such vasomotor abnormalities as outbursts of localized sweating, muscular atrophy such as seen in the interosseous muscles; hyperactive reflexes and other findings. In addition, the brain, spinal cord, peripheral nerves, and ganglia have been considered as possible sites. Although no specific lesion has been demonstrated, changes that are usually attributed to aging are more common in patients with this disease than in others of the same age group. In approximately 85% there were found

* From the Arthritis Clinic of the Harrisburg Hospital, Harrisburg, Pennsylvania.
† Material used in this investigation was furnished by Sandoz Pharmaceuticals, Division of Sandoz Chemical Works, Inc., New York, N. Y.

small collections of mononuclear cells within the nerve sheaths, usually the perineurium of the peripheral nerves. Here the axons and myelin sheaths have frequently demonstrated changes along with corresponding anterior horn cell degeneration. It is felt that these findings may account for the paresthesias and twitchings that are often observed.[2]

In all progressive cases the characteristic deformities are brought about by the continuance of the disease process plus concomitant muscle spasm. Like so many acquired deformities they are brought about to a large extent by gravity and the pull of adjacent muscles. Normally the reciprocal ennervations of the flexor and extensor groups are so balanced that no deformity takes place even though the flexors are more powerful. However, in rheumatoid arthritis something disturbs this balance in such a manner that advanced cases leave ulnar deviations and flexion deformities.

Anatomically there is a rich network of non-myelinated nerve fibers paralleling the path taken by arterioles as they supply the synovial tissue, joint capsule, periosteum, tendons, and adjacent muscles. Because of this, painful impulses that arise about the joint may be felt as pain in the joint. Contributing to this pain is the spasm of adjacent muscles which stimulates the various nerve endings in the periosteum located at the point of tendon attachment.[2] Furthermore, in considering the influence of psychic overtone on the autonomic nervous system and its ultimate effect on various target organs the observations of Ludwig are worth reviewing.

In Ludwig's report on a series of cases where the psychogenic factors have been studied he states that "both onset and subsequent exacerbations seemed to be related, at times in a predictable fashion, with emotional events implying loss of security. In those instances when exacerbations and emotional events could be carefully studied, there appeared to be a sequence of emotional factors followed by physical phenomena resembling a shock-like state, with apprehension, pallor, and autonomic overactivity which progressed quite rapidly to the appearance of joint manifestations. It has been observed that similar patterns are present in cases of ulcerative colitis, Raynaud's disease, bronchial asthma, and chronic dermatitis." Thus the possibility exists wherein individuals whose emotional and physical homeostatic mechanisms are unstable react to any type of stress by initiating the still unknown factors resulting in the development of, or exacerbation of, rheumatoid arthritis.[3]

A more voluminous review of material concerning autonomic activity or neurohumoral integration is not warranted in this paper. Hence the above should be a sufficient preamble for the hypothesis that the autonomic nervous system plays a major role in the etiology and subsequent exacerbations of rheumatoid arthritis. However, the burden of demonstrating this will necessitate a series of clinical and experimental studies. Perhaps the entire galaxy of sympathomimetic and parasympathomimetic drugs will have to be tried—either alone or in combination. Then again, those drugs that impede or facilitate the transmission of impulses across synapses will have to be investigated as to their potentiality for correcting a disturbance in autonomic balance that threatens to bring into existence a full-blown picture of rheumatoid arthritis.

As an initial step the selection of the first preparation was purely circumstantial. Nevertheless, it has opened a new avenue of investigation that carries with it considerable promise. D.H.E.—45 is the preparation used in the preliminary study. It is the methane sulfate of hydrogenated ergotamine, a new sympathicolytic agent employed for the treatment of migraine and conditions associated with overactivity of the sympathetic nervous system. Phar-

macologically it has been demonstrated in animals that the di-hydrogenated ergot alkaloids possess added sympathicolytic and adrenolytic properties but have little direct constriction action on smooth muscles.[4] Furthermore, it has been shown in animals and humans that the ergot alkaloids are definitely less toxic in their dihydrogenated form and will produce increases in limb and digit blood volume, plus augmented peripheral flow which had been attributed originally to sympathicolytic actions.

Subject material for this study consisted of proven cases of rheumatoid arthritis, rheumatoid spondylitis, palendromic rheumatism, fibrositis, fibromyositis, and cases of rheumatoid arthritis under cortisone therapy that have become progressively more refractory to the steroid and returned to their pretreatment status in spite of increased dosage. Eight of these patients received intramuscular injections two to three times weekly, for periods ranging from two to five months duration. The other three, two with rheumatoid arthritis and one with hypertrophic arthritis, got daily injections. Each injection contained one milligram of dihydroergotamine methanesulfonate.

Report of Cases

Case I: Mrs. K. B. had advanced rheumatoid arthritis of many years duration with concomitant deformity, limitation of motion, muscular atrophy and asthenia. In January of 1950 she began taking Cortone tablets with a satisfactory therapeutic response, whereupon the dosage level was reduced to 2½ tablets daily. She remained in a general state of remission until March 4, 1951. At this time she had slight mooning of the face, some hypertrichosis plus a progressive increase in arthralgia with limitation of motion. An increase of the Cortone to 125 mgs. daily failed to alter the clinical picture. By November of 1951 she had a full-blown Cushing's syndrome plus the pre-Cortone status of her arthritic process. However, she refused to give up the use of cortisone and continued to take 2½ tablets daily. On December 21, 1951 she received her initial injection of D.H.E.-45. After three days her stiffness, joint pain, and asthenia disappeared and she again returned to a state of well being similar to that enjoyed after the first week of initial cortisone therapy. She had received a total of 15 ampoules given on consecutive days and remained in a state of remission for ap-

1. K. B. 64 F	Rheumatoid arthritis	Marked improvement
2. H. F. 61 M	Rheumatoid arthritis	Improved—less arthralgia; sed. rate dropped from 60 to 5 mm. per hr.
3. C. W. 55 M	Rheumatoid arthritis	Questionable improvement
4. W. S. 57 F	Rheumatoid arthritis	No improvement
5. W. L. 47 M	Rheumatoid arthritis	Discontinued because of slight reaction (rash)
6. E. W. 51 F	Hypertrophic arthritis	Not improved with daily injections
7. F. M. 42 M	Rheumatoid spondylitis	No improvement after two months of D.H.E.—45
8. S. B. 48 F	Periarticular fibrositis of knee	Slight improvement
9. E. B. 41 F	Palindromic arthritis	Not improved
10. H. B. 45 F	Hypertrophic arthritis	Not improved
11. M. McN. 66 F	Shoulder-hand Syndrome	No improvement

proximately five weeks.

When the arthralgia and limitation of motion again became a serious problem, the D.H.E.-45 promptly evoked another remission and was discontinued after seven daily injections. Within four weeks the program had to be repeated.

Case II: Mr. H. F. had advanced rheumatoid arthritis. Almost all of his peripheral joints were involved and both knees had extensive pannus formation. He had been studied and treated with gold for many years but the process continued to advance. For a period of five months he received two weekly injections of D.H.E.-45. After one month of treatment he volunteered the information that there was less pain in his joints and that what movement he still had was more comfortable.

To eliminate the subjective and psychological factors of trying a new preparation the sedimentation rate was used as an index. Initially this was 60 mm. per hour and after five months it dropped to 5mm. per hour. This was the lowest reading he had in the many years of treatment.

Case III: Mrs. W. S. presented a history essentially the same as Case I except that she had fixation of both knees at 90°. She was receiving 50 mgs. of cortisone for over a year and there was a mild Cushing's syndrome present. However, the arthralgia was getting more marked and any increase in the dosage of cortisone intensified the side effects. A series of daily injections of D.H.E-45 was given but she did not experience any subjective or objective improvement after two weeks.

The remaining cases, both rheumatoid and non-rheumatoid, also failed to exhibit any response.

It is felt that the remissions noted above were facilitated by altering the status of the sympathetic nervous system or sympathico-adrenal system. In some way the end result of modified autonomic activity was able to bring about clinical improvement.

Summary

An attempt has been made to review briefly what appears as presumptive evidence for the role played by the nervous system in the etiology and remissions of rheumatoid arthritis. Secondly, eleven unselected cases having arthritis or allied rheumatic conditions were treated with D.H.E.—45, a sympathicolytic drug, and results recorded. Of interest were the five cases of rheumatoid arthritis. Their response ranged from none at all to an almost dramatic remission. It is felt that further study should be done along this line of thought: perhaps not with the idea of developing a specific, particularly, but to help evaluate the etiology and the remission factors; and develop a substance that will effectively supplement a properly balanced program in the management of rheumatoid arthritis.

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805 North Second Street

Varicose Ulcers

Varicose ulcers are the result of degenerative tissue changes due to impairment in the venous circulation. The differential diagnosis between varicose ulcers and those of syphilitic and tuberculous origin was discussed in the article on injection treatment of varicose veins.

Treatment Varicose ulcer might heal after obliteration of the varicosities. Extensive indurated ulcers need supporting compression bandages to reduce the edema and administration of muscle adenylic acid to facilitate capillary circulation.

UNNA's Paste Boot Edema can be reduced in an ambulatory patient by the constant compression of this dressing, which is prepared and applied in the following way: It is composed of zinc oxide 25 g, gelatin 50 g, glycerin 100cc. and water 100cc. The water is first heated in a double boiler, then the gelatin is dissolved in the hot water. The glycerin and zinc oxide are mixed until a smooth mixture results and then added to the dissolved gelatin and cooked for a half hour. The mixture is allowed to cool until it is just warm enough to be comfortably tolerated by the skin, then it is painted on the leg with a paint brush, beginning on the dorsum of the foot just above the toes and ending at the tuberosity of the tibia at the knee. Gauze impregnated with the same paste is placed over the area of the ulcer and then a two-inch gauze bandage, starting along the medial side of the foot, is applied over the leg. The lowermost turns of the bandage cover the dorsum and sole of the foot, (Fig. 1) the bandage then is carried around the ankle in a figure of eight turn until the entire foot is covered and only the toes and the heel are outside the bandage. (Fig. 2) Each turn of the bandage must lie flat against the part beneath it and must be pulled firmly around the leg so that it fits snugly around it. In all cases in which edema is present the bandage should be pulled tightly,

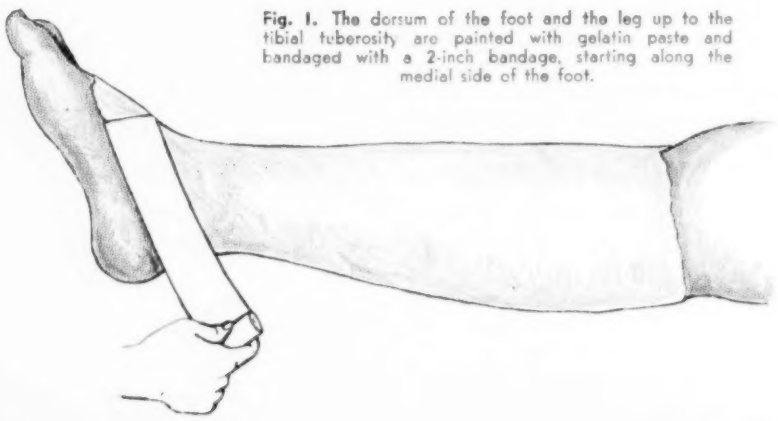


Fig. 1. The dorsum of the foot and the leg up to the tibial tuberosity are painted with gelatin paste and bandaged with a 2-inch bandage, starting along the medial side of the foot.

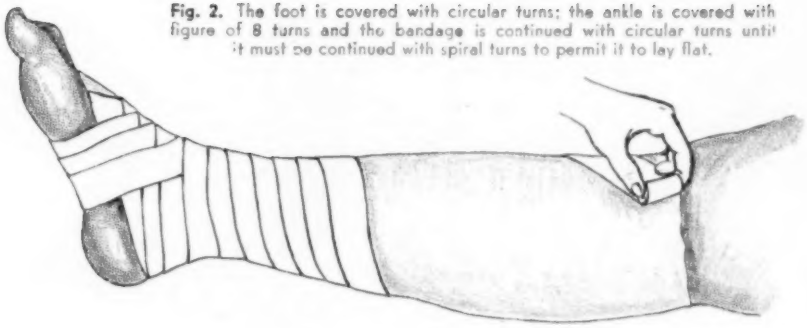


Fig. 2. The foot is covered with circular turns; the ankle is covered with figure of 8 turns and the bandage is continued with circular turns until it must be continued with spiral turns to permit it to lay flat.

otherwise the bandage loosens very soon because the edema will diminish under the pressure. The bandage is then carried in circular turns around the lower part of the foot as far as the turns will lay flat. When the conical shape of the calf does not permit the circular turns to lay flat the bandage is carried upward with spiral turns until it reaches the tuberosity of the tibia, at which point it is reversed and is carried downward in spiral turns. (Fig. 3) This procedure is repeated until the entire surface of the leg is covered with the bandage. The bandage is finished off with two or three circular turns at the tuberosity of the tibia. (Fig. 4) No reverse turns are ever made on any part of the leg except at the top of the bandage because the ridges of the reverse turns might press into the skin.

After the first layer of the bandage is completed the bandaged leg is painted again with the gelatin paste and a second layer of bandage is applied in a similar fashion as the first one. (Fig. 4) After the second layer is completed a half-inch adhesive is applied longitudinally at the medial and lateral surface of the leg and this adhesive is anchored with five or six circular adhesive strips placed in equal

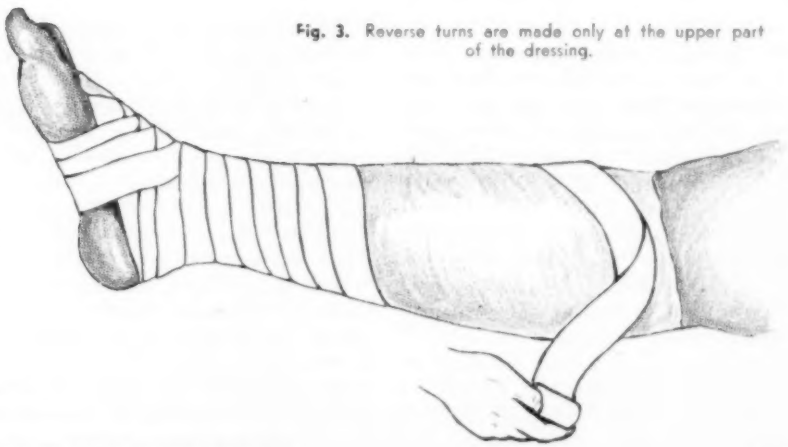


Fig. 3. Reverse turns are made only at the upper part of the dressing.

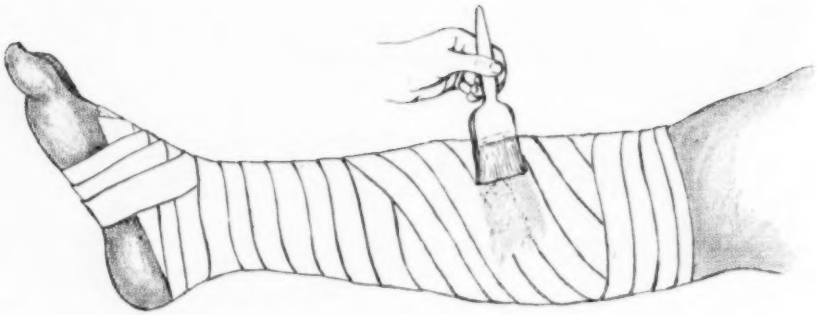
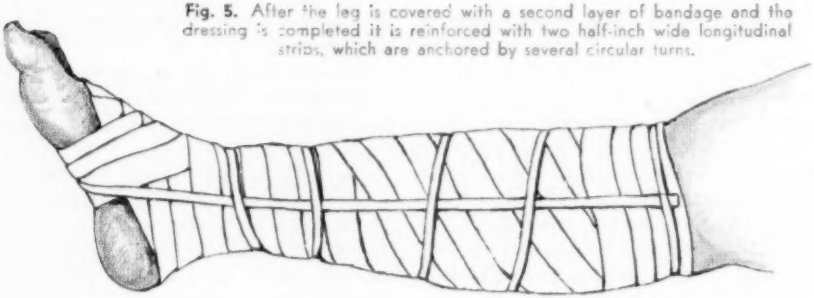


Fig. 4. After the leg is completely covered with bandage it is painted again with the gelatin paste.

Fig. 5. After the leg is covered with a second layer of bandage and the dressing is completed it is reinforced with two half-inch wide longitudinal strips, which are anchored by several circular turns.



distances over the leg. (Fig. 5)

If the ulcer has copious secretion a wax paper sheet can be placed over the first layer of the bandage at the site of the ulcer and the second layer is applied over the wax paper. In humid weather the water content of the paste can be reduced 50 to 75 cc.

The bandage should be changed when by reduction of the edema it becomes loose. If the bandage remains firm it can be left on with advantage for 3 to four weeks without changing. Bandaging of the entire leg should be continued six weeks after all ulcerations heal.

Healing of the ulcerations can be greatly facilitated by administration of adenosine-5-monophosphate, which is commercially available as My-B-Den. Daily injections for three consecutive days of 1cc. of By-B-Den in gelatin solution (sustained action) containing 20 mg. adenosine-5-monophosphate are made intramuscularly after the vial is warmed in hot water until the gelatin is completely fluid, using a 20 gauge 1½" long needle. After the third day injections are made on alternate days. It takes one to three weeks for definite improvement. Sublingual tablets can be substituted for injections after definite improvement is noticed. Two tablets daily each containing 20 mg. adenosine-5-monophosphate are sufficient for maintenance dosage until completely healed.

EDITORIALS

Taxes and Subsidies

The short life career of the doctor ought to be taken into account by the taxing authorities of the nation who levy taxes upon the citizenry. The productive life of the active practitioner is nowadays at its peak for ten years and then his earnings grow less. Half his lifetime and high costs are invested in his education and training and yet there is no equitable spreading out of taxation over both lean and fat years.

Nor is it to be forgotten that the government is actually subsidized by the doctor by reason of his free care of the poor and medically indigent of all grades, the value of which, unpaid for by political beneficiaries, is astronomical.

The doctor pays a tax and he pays a subsidy. What other citizens do that? To take this into account in levying taxes the government would not be granting a special privilege but only a fair deal (a familiar term!)

We can gain some indirect light on this subject from the book just published by Beardsley Ruml and Theodore Geiger *(The Manual of Corporate Living)*. These authors argue that the right of corporations to make deductions from Federally taxable income is recognition of the propriety of the assistance by corporations of certain activities not supported by government or aided as formerly by private individuals now "taxed to death."

"As the book maintains, the virtue of the new corporate practice is not merely from the standpoint of the corporation wishing to pursue enlightened ways and of welfare organizations concerned about continuing support and of the general public concerned about rounded community developments, but of the government itself. For this deduction is by no means a tax "loophole." The amount of revenue which would be gained by the government by eliminating this right of deduction would be small whereas the loss to public welfare with which the government is concerned could be great.

"To be justified any application of corporate funds by directors must be on the ground that such application may be reasonably regarded as leaving the enterprise and its stockholders better off. But it has become recognized that the return to the corporation for an expenditure need not necessarily be a tangible thing. The benefit might be a very indirect one as in the case of assistance to a hospital or school serving employees, or even less obvious as in the case of help to maintain a rounded community, meeting moderate requirements in which the business enterprise may thrive, or building up good will to be reflected in better public relations."

The bearing of this line of reasoning upon our present suggestion is obvious.

Alcohol and Road Traffic

The *Journal of Criminal Law, Criminology and Police Science* of Northwestern University remarks upon the extraordinary variations in the criteria of alcohol intoxication which one finds in different countries contending with the influence of alcoholism on road traffic. In Greece and Iran a motorist must be really "drunk" before he is in violation of the law. In Norway the drinking of two beers would place the driver "beyond the pale." In Italy, a wine-drinking nation, the drinking driver accounts for only one per cent of the traffic accidents. Toronto experience is that about one-third of drivers involved in accidents have been drinking and one-sixth have more than .05 per cent alcohol in their circulating blood. Companies which write casualty insurance for trucks have found that they can profitably give lower rates to men who are members of temperance unions.

"Utopia in a Straitjacket"

One of the saddest consequences of socialized medicine in Britain is the abandonment of the old and defective, who are overfilling the hospitals; indeed, badly needed new hospitals and enlarged old ones are "conspicuously non-existent," and because of the shortage of nurses, 40,000 beds were closed in 1951. Palyi *(Medical Care and the Welfare State)* says that the British people no longer have any responsibility for their aged parents. Old people are frequently found dead "in varying conditions of horror." The hospitals are bureaucratically administered by politically swollen lay staffs.

At its best the medical service is "very unsatisfactory" and at its worst "a positive source of public danger. . . . The nation's health is actually jeopardized." *(Freeman*, June 1952).

The system "has stifled medical research, degraded the doctor and virtually bankrupted the nation."

Freedom, Medical Style

It is a weird state of affairs when, in a supposedly enlightened age, a prominent physician has to advance a passionate plea in behalf of allegedly free colleagues like the following, which we quote from the July *Bulletin* of the Kings County Medical Society (INew York):

"Another problem which begs solution, is that which pertains to hospital privileges. When a doctor graduates he is duty bound to treat all cases alike. He is to render to them the best possible medical service available. Such service can only be partly rendered at the patient's home or in the doctor's office. In fact, the cases that the patients, as well as the doctors, are mostly concerned about, are the serious and critical cases which require hospital care. Isn't it ironical, then, that a doctor who has all the opportunity to treat the less serious cases at the home of the patient, or in his own office, is often deprived of the privilege of treating his own serious private cases, simply because they need more efficient medical care which they can only obtain in hospitals, from which he is barred.

"Picture the legal profession in which the lawyer would not have the privilege of the court in which to try his cases and could adjust the differences only outside the court.

"Many realize this incongruity, and feel that every competent practicing physician should have privileges in a hospital of his own community, under the guidance and supervision of the medical staff of the hospital. He should be allowed to treat his own private cases in which he has proven his competency. Such a policy enables the patient to receive the best possible service from his own family doctor. It would enable the doctor to maintain the close relationship with his patient which is essential to the patient's comfort and happiness. It would also stimulate the doctor to improve his knowledge and competency in the field

of practice in which he is engaged, as the result of his association with the other members of the hospital staff. Such hospital privileges would result in better medical service and esprit de corps among the medical profession, and the saving of many lives."

Would not a new Gulliver, visiting us from Mars, describe our medical culture as barbarous, with many of our "responsible" leaders either blissfully unconscious of grievous incongruities, or malevolently complacent?

Indirect Injuries Biggest Problem in Atomic Bombing

Civil defense preparations should take into consideration the fact that from one-half to three-fourths of the casualties surviving an atomic bomb explosion will have incurred injuries other than those caused by the bomb itself.

This recommendation was made in a report by Dr. Fiorindo A. Simeone, Cleveland surgeon, to the Council on National Emergency Medical Service of the American Medical Association. These injuries, Dr. Simeone pointed out, are likely to be multiple and may be associated with burns and with the effects of nuclear radiation.

He pointed out that there will be a great number of indirect injuries. The collapse of buildings and shelters, flying debris, and especially flying glass will cause a large number of so-called mechanical wounds.

"Otherwise," he added, "there is nothing in the treatment of these wounds which sets them apart from those encountered daily in surgical practice.

"Any plan for the management of casualties in the event of an atomic bomb attack, however, must be conditioned by the fact that wounds will occur in overwhelming numbers. In addition, there will be widespread destruction of physical facilities.

"It is early after an atomic bomb attack that panic and confusion may exist. It is during that time that previously made plans for the management of mass casualties will be most effective."

Dr. Simeone said that the majority of casualties can be made quite comfortable by first-aid treatment and will not require narcotics for the relief of pain. Fear, anxiety and mental anguish are commonly mistaken for pain, he added.

From the experience of the Texas City, Texas, explosion several years ago, where 800 of approximately 4,000 casualties were injured severely enough to require hospitalization, it might be expected that one out of five of the casualties from an atomic attack would require treatment for wound shock, he said.

"The principles of treatment are the same as those which crystallized during World War II and which are being demonstrated as sound in the present conflict in Korea," Dr. Simeone said.

"Chaos can be avoided only if the casualties are managed according to a master plan which has stood the test of time. A chain of evacuation from the disaster area must be developed by industrial communities. Plans will vary from one community to the next, but all should aim at a design which will permit an orderly evacuation of casualties from the target area to intact installations within the community and its suburbs.

"Those concerned with civilian defense must recognize that planning cannot be delayed. Time is required for plans to mature. There is no time for planning when a target area has been struck."

Dr. Simeone's report is one of a series requested by the Council on National Emergency Medical Service to inform the medical profession on problems pertaining to civil defense, C. Joseph Stetler of Chicago, secretary of the council, said.

OTOLOGY

L. CHESTER McHENRY, M.D., F.A.C.S.*
Oklahoma City, Okla.

Anti-Allergic Methods Used in the Restoration of Hearing During Childhood

M. F. Jones and associates *(Annuals of Otology, Rhinology and Laryngology,* 60:-1085, Dec. 1951) report on a study of the causes and treatment of impaired hearing in children at the Conservation of Hearing Clinic of the Manhattan Eye, Ear and Throat Hospital (New York City). Audiometers are used for testing hearing in "sound conditioned" rooms. The children studied were from five to sixteen years of age. In 100 children, the hearing was considered normal, as the audiometer tests showed no more than 20 db hearing loss for any of the "key" frequencies, and careful examination showed no pathological changes in the ears. Yet following tonsillectomy and adenoidectomy there was definite improvement in hearing for all frequencies except the 256 frequency, the greatest degree of improvement occurring at the 2048 frequency. In another group of children who showed definite impairment of hearing, tonsillectomy and adenoidectomy were done; a definite improvement in hearing was noted, also in the higher frequencies. In another group of children with impaired hearing, sinusitis and allergy were present. It was at first planned to study the effect of sinusitis and allergy on hearing separately, but it was found that in children allergy was a frequent cause of recurrence. Treatment of the sinusitis resulted in varying degrees of improvement, but by the use of anti-allergic treatment a permanent improvement in hearing, and often restoration of hearing to within normal limits, was usually obtained. In the cases studied, the most common type of allergy was found to be a food allergy; milk, eggs, wheat, shellfish, chocolate and nuts were "the principal offenders." Treatment included a diet consisting of foods that have a minimum allergen content but "complete nutritional values," including maximum protein. Treatment also included elimination of contact with allergens, desensitization, using Hansel's minimal dose method, and measures for physical and mental rehabilitation. Other investigators have also noted the role of allergy in the causation of non-suppurative deafness, but absolute scientific proof is difficult to obtain and the present knowledge rests on "circumstantial evidence." The authors are continuing their study with children with the hope of establishing "convincing proof" of the true relationship of allergy to non-suppurative impairment of hearing.

McHENRY

COMMENT

Controlled studies such as these always give more definite information than general clinical impressions. We have seen a great many young-

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sters with nasal allergy who I am sure had poor hearing in some degree because of poor ventilation of their noses, nasopharynges and eustachian tubes and middle ears. These children certainly hear better when their allergy is brought under control and they have normal ventilation of these upper air passages. Continuation of these studies especially over a period of years will be of very considerable value in this problem.

L. C. McH.

Closure of Tympanic Membrane Perforations by Trichloracetic Acid Cauterization

L. A. Adams (*A.M.A. Archives of Otolaryngology* 55:38, Jan. 1952) reports the cauterization of the margins of the tympanic membrane perforation with trichloracetic acid in 12 cases in which the perforation was of considerable duration. This method was employed to prevent the epithelial outer layer of the membrane from growing over the margin, which keeps the perforation from closing. Trichloracetic acid solution in 50 to 75% solution was applied to the margin and surrounding edge of the perforation; at the time of the first application, the edges of the perforation were abraded or rubbed in addition to applying the acid. If whitening of the edges did not occur, a second application of the acid was made immediately. Treatments were usually given once or twice every ten days; when a granulating edge appeared, weaker dilutions of the acid were used, and applications were made to the area immediately surrounding the margin. A healing edge showed a pink rim that had a luminous appearance under illumination. The treatment resulted in closure of the perforation in 10 of the 12 cases, but in one of these cases, the membrane that closed the perforation was thin, and ruptured; it was, however, beginning to heal again when the patient was last seen. In one of the 10 cases, the membrane closing the perforation was atrophic; the patient was fifty-five years of age, and the perforation was of long duration. The average time for closure of the perforation was seven weeks (forty-nine days); the shortest time before closure was sixteen days and the longest time one hundred and nineteen days. In one of the 2 patients in which the membrane failed to close completely, approximately 20 per cent closure was obtained, but in the other case there was no tendency to closure. Some of these patients showed a loss of hearing for low tones only, others a loss of hearing for both low and high tones. In all cases in which the perforation closed, there was a significant improvement in hearing, which in all but one instance, reached "an efficient hearing level."

COMMENT

Cauterization to stimulate healing in the margins of tympanic membrane perforations has been used for a long time and at times with very considerable success. We have found that the placing of a small patch of Cargile membrane over the perforation after such cauterization also seems to stimulate closure.

L. C. McH.

Nuclear Jaundice and Deafness

John Gerrard (*Journal of Laryngology and Otology*, 66:39, Jan. 1952) reports a study of the relation of perceptive deafness in children to severe neonatal jaundice and Rh-incompatibility or prematurity. This study was made through a school for the deaf in Birmingham, England. Deafness associated with kernicterus has been reported by several authors since 1944. Kernicterus usually occurs as a sequel of Rh incompatibility, but it may occur in cases of prematurity not associated with Rh incompatibility. In both cases the neuropathology is the same. In the study of children in the school for the deaf, data were obtained for 360 of 407 children; 33 of these had been jaundiced in the neonatal period; 5 of these showed mild symptoms of kernicterus resulting from Rh iso-immunization; while 5 cases of kernicterus in a school population of 407 is not a high incidence, it is a much higher incidence than has been found in the general population, which is not

greater than 1 per 3,000. In 181 of the children studied, the birth weight was known, and in 33 cases it was 5½ lbs. or less, indicating prematurity in 18.3 per cent of these children, while in the general population of Birmingham, the incidence of prematurity is 6.9 per cent. Of 26 children known to be jaundiced in early infancy who did not have hemolytic disease, one child was found to be mentally deficient, not deaf, in another case the deafness was probably familial, in another, probably due to maternal rubella in the tenth week of pregnancy; in 2 there was chronic middle ear disease. Of the remaining 21 cases, 11 had severe jaundice; 8 were late in learning to walk and 6 showed symptoms of mild kernicterus. The author has also made a study of 24 children five years or more of age, who show neurological sequelae of Rh isoimmunization; a complete audiometric examination was made, showing perceptive deafness in 22 and conduction deafness in one, with a normal range of hearing in only one child. The cochlea has been examined in 2 cases of kernicterus in which death occurred in the neonatal period; in both cases the organ of Corti was normal, but there was "extensive destruction" of the nerve cells of the cochlear nuclei. The findings indicate that the cochlear lesions of kernicterus, whether due to Rh isoimmunization or not, are an important cause of perceptive deafness in children.

COMMENT

Gradually more and more information is being obtained about congenital deafness. Preventive measures in this type of situation under consideration are of course indicated because of the danger to life as well as the secondary consideration of deafness.

L. C. McH.

Dihydrostreptomycin-Boric Acid in the Treatment of Aural Discharge

G. C. Saunders (*Laryngoscope*, 61:1197, Dec. 1951) reports the use of dihydrostreptomycin-boric acid powder in the treatment of both otitis externa and otitis media with chronic aural discharge. A review of the literature indicates that in otitis externa and chonic otitis media, gram-negative bacilli, especially *Pseudomonas aeruginosa*, are the predominating organisms; often associated with *Staphylococcus aureus*. In the cases reported, bacteriological cultures were not made "routinely" at the time that treatment was begun, but when cultures were made, the findings were in accordance with those reported in the literature. Pure cultures of *Pseudomonas aeruginosa* and of *Staphylococcus aureus* on agar plates were treated with the dihydrostreptomycin-boric acid powder and other cultures were treated with boric acid solution. In the former, there was definite inhibition of the bacterial growth, but in the latter very little bacteriostatic action. The author found no other reports of the topical use of streptomycin or dihydrostreptomycin in a drying agent, such as boric acid powder, but as this powder had proved of value in the treatment of aural discharge, it was used as a vehicle for the dihydrostreptomycin. The dihydrostreptomycin-boric acid powder was found to be acid, and this is also considered of value in maintaining the natural acidity of the skin in the treatment of aural discharge. In the cases reported on beginning treatment, the ear was carefully cleaned with 70 per cent ethyl alcohol and dried; the dihydrostreptomycin-boric acid powder (1 part of dihydrostreptomycin to 3 parts of boric acid powder) was insufflated into the ear canal with a De Vilbiss powder blower; the patient was instructed not to touch the ear until the following morning; then to begin the use of boric acid-alcohol drops in the ear, five drops three times daily until the next visit to the office, when the dihydrostreptomycin-boric acid powder was again applied. Most patients were treated at the office two or three times a week, but this was not possible in all cases. In 31 cases of otitis externa treated

by this method, improvement was obtained in 21 cases; in 7 results were unsatisfactory; in 3 vesicular dermatitis developed. In 30 cases of chronic otitis media with perforation of the tympanic membrane or signs of previous mastoid involvement, there was definite improvement in 22 cases, in some of which the perforation closed, unsatisfactory results in 6 cases, and vesicular dermatitis in 2 cases. These results indicate that the dihydrostreptomycin-boric acid powder employed is "an effective agent in the treatment of aural discharge."

COMMENT

This is another addition to the already very great armamentarium of agents which we use in infection of the external auditory meatus and the middle ear.

L. C. Mc.H.

Terramycin in Tuberculous Otitis Media

L. L. Titche (*United States Armed Forces Medical Journal*, 3:63, Jan. 1952) reports a case in which a man twenty-seven years of age under treatment for chronic pulmonary tuberculosis developed otitis media in the left ear; the secretion was mucopurulent; tubercle bacilli were cultured from this secretion and found to be resistant to streptomycin. The pulmonary infection had also progressed under streptomycin therapy, owing to streptomycin-resistance of the infecting organisms. Roentgenograms showed evidence of infection of the mastoid cells on the left side. Terramycin was applied locally in the ear—50 mg. in 1 cc. of distilled water being instilled daily. The ear became dry after a month's treatment, and the mastoid cells were found to be clean on roentgenological examination. This case is of interest as showing that terramycin therapy is effective in some cases of tuberculous otitis due to infection with streptomycin-resistant organisms.

COMMENT

An interesting report and worthy of remembrance by those who have occasion to treat tuberculosis of the ear.

L. C. McH.

RHINOLARYNGOLOGY

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Hemorrhage in the Nose and Throat

H. P. Harkins (*A. M. A. Archives of Otolaryngology*, 55: 8, Jan. 1952) notes that bleeding is the most common complication in otolaryngologic surgery. As is well known, hemorrhage after tonsillectomy and adenoidectomy occurs most frequently in the first twelve hours after operation, and the patient should be under careful observation during this period. If symptoms develop which indicate that bleeding may be occurring, careful inspection of the nose, nasopharynx and oropharynx to locate any bleeding area is indicated. All blood clots in the tonsil fossae and adenoid areas should be removed, as bleeding may be occurring behind them. In children in whom bleeding has continued for some time, an inhalation anesthetic should not be used until after transfusions of whole blood have been given; if suturing is necessary in such cases local anesthesia should be employed.

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If there is extensive bleeding in the tonsil fossa, the author has found the best method of treatment is to place a tampon of oxidized cellulose in the fossa, hold it there securely and suture the anterior and posterior pillars over it. Neither the sutures nor the pack need to be removed, as oxidized cellulose is readily absorbed. Severe nasal bleeding usually originates "high up and far back" in the nose; there is usually a profuse flow of blood into the pharynx. Nasal bleeding of this type is best controlled by a postnasal tampon, under maintained tension, with oxidized cellulose dressings of the anterior nasal chamber, extending back to the nasopharyngeal tampon. No postnasal pack should be kept in place more than forty-eight hours on account of the danger of disease of the middle ear or Eustachian tubes. If bleeding recurs, the pack may be reinserted, or some other method of treatment may be employed. When hemorrhage from the nose or throat cannot be controlled by any of these methods ligation of the external carotid artery is indicated. The author notes that in 32 of his patients with severe epistaxis, 2 required ligation of the external carotid, which promptly stopped the bleeding. The administration of vitamin C and vitamin K, without the use of acetylsalicylic acid or salicylic acid chewing gum is recommended for the prevention of hemorrhage after tonsillectomy and adenoidectomy.

COMMENT

We agree with the author's general recommendations except that in the case of bleeding from the tonsil fossae, we believe that grasp of the bleeding point with a hemostat and then inclusion of the bleeding point in a small suture ligature of fine plain catgut is the most efficacious method of control.

L. C. McH.

The Effect of Acth and Cortisone on the Upper Respiratory Tract

J. E. Bordley (*New York State Journal of Medicine*, 51:2636, Nov. 15, 1951) reports a study of the upper respiratory tract in more than 60 patients under treatment with ACTH or cortisone, including 24 patients with various types of respiratory tract allergy. All patients under ACTH therapy showed improvement in the appearance of the nasal mucous membrane, and a reduction in nasal discharge; and changes in the color and appearance of the lymphoid tissue of the nasopharynx. In 9 cases of asthma without allergic rhinitis, treated with ACTH or cortisone, these same changes were noted. In 15 patients with allergic rhinitis and polyp formation or polypoid changes in the nasal mucosa, with or without asthma, treatment with ACTH or cortisone resulted in reduction in the edema of the mucous membrane, diminution in the size of the polyps, decrease of nasal discharge, and improvement in breathing space. Under ACTH therapy the polyps often completely disappeared; with cortisone, the shrinkage in the size of the polyps was less pronounced and slower. When treatment was stopped, the allergic changes in the mucous membrane and the polyps reappeared; the period of remission was shortened if an upper respiratory infection developed. In 3 cases of oral pemphigus with lesions extending to the soft palate and postpharyngeal wall, there was prompt improvement under ACTH therapy, but a recurrence soon after therapy was stopped. Histologic study of specimens of nasopharyngeal lymphoid tissue and nasal polyps during treatment showed very little change. Evidence of sinusitis developed in 11 patients, all of whom had previously had sinusitis in the last four or five years; there was but little reaction in the mucous membrane near the sinus orifices, and the symptoms were less severe than usual in acute sinusitis; 2 patients had blood stream infections; all infections were successfully treated with antibiotics — penicillin, aureomycin or chloramphenicol. As the use of ACTH and cortisone apparently lowers resistance to focal infections, the author advises that

an antibiotic should be given with these hormones in patients who have had sinusitis. Although the effect of ACTH and cortisone is not permanent in nasal allergies, the value of such therapy "should not be underestimated because of the transient effect."

COMMENT

These observations are in agreement with other reports. We would emphasize the author's last statement that the value of such therapy should not be underestimated because of the transient effect. We also feel that the converse of this should be emphasized, that the beneficial effects should not be **overestimated** because they are purely transient effects.

L. C. McH.

Endocrines and the Nose

E. Watson-Williams (*Journal of Laryngology and Otology* 66:29, Jan. 1952) in a study of the relation of the thyroid gland to different types of rhinitis extending over many years, has found that atrophic rhinitis is frequently associated with hypothyroidism, including simple goiter; also he found atrophic rhinitis in some patients who did not have goiter, but whose family history showed a number of relatives with goiter. In such cases the administration of thyroid, in small doses over a long period, or iodine in cases in which thyroid was not well tolerated, resulted in complete relief of the nasal symptoms in four-fifths of the patients taking thyroid and three-fifths of those taking iodine, and definite improvement in "roughly half" the remainder. In cases of toxic goiter, there was a hypertrophic rhinitis in over half. In women in the menopause, there may be atrophic rhinitis that does not respond to thyroid treatment. Since synthetic estrogens that can be administered by mouth have become available, it has been possible to treat these cases successfully. The course of treatment usually employed is 1 mg. stilbestrol twice a day for two weeks; after a two weeks' interval, repeat the two weeks' course (with two weeks' intervals) three or four times; if this is effective, the course of treatment may be repeated again in six months or a year. The rhinitis, even with very advanced atrophy, has been completely relieved in about four-fifths of the patients so treated. In a few cases the recurrence of menstrual bleeding made it necessary to reduce the dosage of stilbestrol or increase the interval between courses of treatment. In men over sixty years of age, there may be a mild nasal atrophy with pallor of the mucosa, and a watery discharge that tends to hang as a drop at the end of the nose. In 25 cases of this type testosterone propionate tablets have been used, one 5 mg. tablet daily for three weeks being placed beneath the tongue. In 17 of these patients, the nasal symptoms were completely relieved.

COMMENT

Reports in this country that we have seen regarding the use of thyroid in the treatment of rhinitis have indicated some definite benefit in cases of vasomotor rhinitis. However, we have not seen such glowing reports as these by Dr. Watson-Williams. We feel that a word of caution should be included in recommendations for this sort of therapy in that the patient's general medical condition and his endocrine situation in general should be very carefully watched, if he is to be under such therapy.

L. C. McH.

The Tonsillectomy-Poliomyelitis Problem

C. K. Mills (*Laryngoscope*, 61:1188, Dec. 1951) presents a review of the literature on the relation of tonsillectomy to poliomyelitis which shows "unmistakable evidence" that the incidence of the bulbar form of poliomyelitis is definitely higher in patients who have had a recent tonsillectomy. There is also some evidence that this incidence of the bulbar form of poliomyelitis is somewhat higher in patients who have had a tonsillectomy done at any time. This risk is not sufficient to contraindicate adenotonsillectomy for definite medical reasons, but the timing of the operation should be taken into consideration in relation to the incidence of poliomyelitis or the occurrence of epi-

demics of the disease in the community. The operation should not be done during an epidemic of poliomyelitis or in patients known to have been recently exposed to the disease; and it should be delayed when the incidence of poliomyelitis in the community is known to be increasing unless delay in the operation involves greater danger to the patient. In Massachusetts the State Board of Health sends a bulletin to all hospitals weekly during the summer, giving the number and location of cases of poliomyelitis in each community and advising the hospitals whether or not tonsillectomies should be done.

COMMENT

This seems a fair summation of the consensus of opinion on this problem by those who are not prejudiced one way or the other. It should be noticed that the author talks about "patients" and does not confine his recommendations to either children or adults. We feel that the problem of tonsillectomy and poliomyelitis, however it may be estimated, is of as much importance in adult patients as in children.

L. C. McH.

Multiple Papilloma of the Larynx: A Preliminary Report of Four Cases Treated with Terramycin

I. M. Bradburn *(Laryngoscope* 61:1105, Nov. 1951) reports the treatment of 4 cases of multiple papilloma of the larnyx with terramycin following forceps removal. Three of these patients were children, three to six years of age, with the typical multiple papilloma of childhood. One patient was an adult, a woman twenty-eight years of age, who was included in this group because her lesions showed an "unusual similarity" to the childhood type of multiple papilloma. In the discussion of these cases the author notes that laryngeal papillomas in children show a tendency to recur but often disappear in puberty; if they persist into adult life, they tend to show the clinical characteristics of the adult type, with less tendency to recurrence after surgical excision. Evidence that a virus is an etiological agent in multiple papilloma of the larynx in children has been presented by several investigators, indicating the possible value of the newer antibiotics in treatment. In the cases reported, terramycin was given in a daily dosage of 50 mg. per kg. body weight for at least two months. In 2 of the cases the papillomas have entirely disappeared; in 2 some papillomatous tissue still persists, but terramycin treatment is being continued. In none of the patients was there any gastrointestinal disturbance during treatment with terramycin with the dosage employed, and blood counts remained within normal limits. No definite conclusions can be reached on the basis of so few cases, but terramycin after surgery had a beneficial effect on multiple papilloma of the larynx of the childhood type; and this lends "added support" to the theory of the virus etiology of this type of multiple papilloma.

COMMENT

Multiple papillomata of the larynx, especially in children, are so variable in their behavior that reports of a great many more cases will be necessary before any conclusions can be reached regarding the efficacy of any particular form of therapy. Aureomycin has been used on the same theory as this author has used terramycin. We feel that such efforts are well worthwhile and will await further reports with considerable interest.

L. C. McH.

Warns Against Misuse of New Antituberculosis Drugs

A warning against improper or indiscriminate use of three new antituberculosis drugs was sounded in an editorial in a recent *Journal of the A. M. A.* The drugs are isoniazid (isonicotinic acid hydrazide), iproniazid and pyrazinamide.

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1. Pulaski, E. J., and Schaeffer, J. R.: Internat'l. Abst. Surg. (S. G. & O.) 93:1, 1951.
2. Cutting, W. C.: GP 4:65, November 1951.

MEDICAL BOOK NEWS

Internal Medicine

Wege Vergleichender Therapie in der Inneren Medizin. Zugleich ein Beitrag zur Klinik der Lungenentzündung, Ruhr, Nierenent-Zündung und Genickstarre. By Dr. Robert E. Mark. I. Einführung. II. Lungenentzündung. Berlin, Urban & Schwarzenberg, [1950]. 8vo. 418 pages, illustrated. Paper, DM 26.—

Although the introduction contains numerous fine quotations from the most famous old masters in medicine, the book itself represents the first of a series of monographs in which an attempt is made to evaluate the results of various means of therapy in relation to only one entity of disease. Although planned to work up therapeutic experiences in Dysentery, Nephritis, and Meningitis, the present monograph is dedicated to a survey of the various treatments of 220,000 cases of Pneumonia reaching as far back as 1842 and ending in 1944. Morbidity and mortality as to seasons, age, sex, geography, and types of germs are considered in relation to many specific and unspecific therapeutic techniques, ending just when the sulfa drugs started to become fashionable. The only regrettable shortcoming is that the newest experiences with various types of sulfa drugs, penicillin and other antibiotics could not be included in this book. A similar evaluation of these would be a valuable continuation of this very interesting start.

MAX G. BERLINER

Histophysiology

The Microkaryocytes. The Fourth Corpuscles and Their Functions. By K. G. Khorozian, M.D., Boston, Meador Pub. Co., [c. 1951]. 8vo. 969 pages, illustrated. Cloth, $12.00.

In this book of 969 pages, the author claims that all cells of the body are made up of smaller cells which he calls microkaryocytes. He further claims that these structures originate in the yellow bone marrow; that they make up the nature of secretions and enzymes; that they are concerned with the utilization of therapeutic agents; that they form the globulin fractions and antibodies; and among others that inclusion and elementary bodies are also the cytologic entities called microkaryocytes.

Both the publisher, Meador Publishing Company, and the author are quite expressive in their points of view; but it is to be noted that the text is entirely a one man opinion.

ERLING S. WEDDING

Clinical Pathology

Technical Methods for the Technician. By Anson Lee Brown, M.D. 4th Edition. Columbus, Anson L. Brown, [1950-1951]. 8vo. 784 pages, illustrated. Cloth, $10.00.

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—Continued on page 580

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(Limber, C. R.; Reiser, H. G.; Roettig, L. C., and Curtis, G. M.: Enzymatic Lysis of Respiratory Secretions by Aerosol Trypsin, J.A.M.A. 149: 816-821, (June 28) 1952.

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PHYSIOLOGIC THERAPEUTICS THROUGH BIORESEARCH

—Continued from page 578

tended purpose. Replete with a wealth of information for medical laboratory specialists, its presentation is attractive, well illustrated, easily available, and, best of all, detailed yet simple. A few omissions such as the preparation of colloidal gold solution or the technique of bone marrow preparation and examination, do not detract from its value.

Bacteriology, histology, and alergy are not included. The book is highly recommended for easy and handy reference on the laboratory bench for the laboratorian.

MAX LEDERER

Child Welfare

Maternal Care and Mental Health. A Report Prepared on Behalf of the World Health Organization As a Contribution to the United Nations Programme for the Welfare of Homeless Children. By John Bowlby, M.D. Geneva, Switzerland, World Health Organization, [1951]. 8vo. 179 pages. Paper, $2.00.

This monograph is one of a series, prepared on behalf of the World Health Organization as a contribution to the United Nations program for the welfare of homeless children.

In Part I, data is offered to show the adverse effects of maternal deprivation on the infant and young child especially. Part II is concerned with the prevention of maternal deprivation. There are several appendices and a good bibliography.

This work is well organized and should be read by all interested in the welfare of children.

STANLEY S. LAMM

The Art of Medicine

The Healing Touch. By Harley Williams, M.D. Springfield, Charles C. Thomas, [c. 1951]. 8vo. 370 pages, illustrated. Cloth, $6.75.

Among the introductory remarks is the statement: "The theme of this book is of personality rather than science." This idea is followed throughout the book. Though written non-technically, the doctor will find this new angle in the account of the lives of the various characters with which he is familiar, most interesting and provocative.

There is a "Healing Touch" in the art of Medicine possessed by every doctor, in some more, in others less. It is this that frequently has more therapeutic value than pharmaceutical preparations. This book is interesting, replete with information, and affords pleasant relaxation.

S. R. BLATTEIS

Pharmacy and Materia Medica

Pharmacopoea Internationalis. Vol. I. Geneva, Switzerland, World Health Organization, [1951]. 8vo. 406 pages, illustrated. Cloth, $5.00. (Bulletin of the World Health Organization, Supplement 2)

Work on the drafting of the *Pharmacopoea Internationalis* was started in 1937 —under the auspices of the League of Nations Health Organization—but was interrupted by the Second World War, and was not resumed until 1947 when the Interim Commission of the World Health Organization, which took over the functions of the League's health organization, set up the WHO Expert Committee on the Unification of Pharmacopoeias. It is thanks to the unflagging efforts and singleness of purpose of this committee that the first volume of the first pharmacopoeia to contain internationally-approved standards and nomenclature for drugs is now available.

The book will be of immense practical importance to all concerned with the prescribing and dispensing of pharmaceutical preparations, and will undoubtedly, as is hoped in the preface, "contribute to pro-

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MEDICAL BOOK NEWS

—Concluded from page 580

mote and protect the health of all peoples."

This gives us a most interesting reference book, since matters of both normal and disease physiology are not often considered in a book of this type. The amount of information relating to these subjects is amazing.

The book therefore has an unusual personality, and furthermore is of great practical value. It is to be highly recommended. The reviewer considers that it should be issued in two volumes, however, as a book of 8½ pounds and 1,590 pages is awkward to handle. More attention should be given to this matter of size and weight by publishers.

FRANK BETHEL CROSS

Note—It *is* now put out in two volumes. *Editor.*

Orthopedic Surgery

Kurzgefasstes Lehrbuch der Orthopädischen Krankheiten. By Professor Dr. Peter Pitzen. 5th edition. Berlin, Urban & Schwarzenberg, [c. 1950]. 8vo. 286 pages, illustrated. Cloth, DM 17.40.

This text is the fifth edition of a popular German outline of orthopedics. Basically, although the material has been reorganized and slightly expanded, the contents represent no significant changes.

The book is written primarily for the medical student and as a ready reference work for the practitioner. Despite the faults which the compendium type of book necessarily exhibits, there is nothing quite comparable to it in the American Literature, and in an English translation it should prove popular. Since the scope of the specialty has expanded so remarkably in the last decade or two, greater attention to traumatic problems would make it even more attractive.

MAX S. RABINOWITZ

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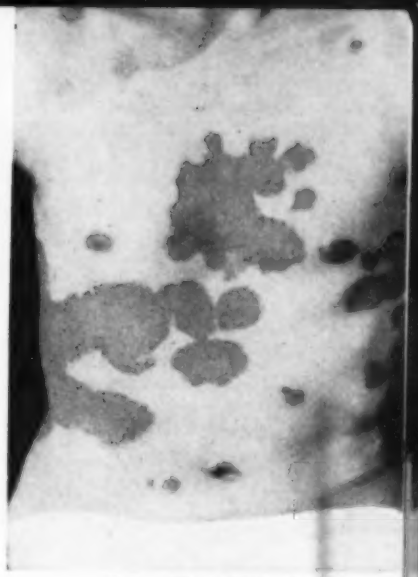

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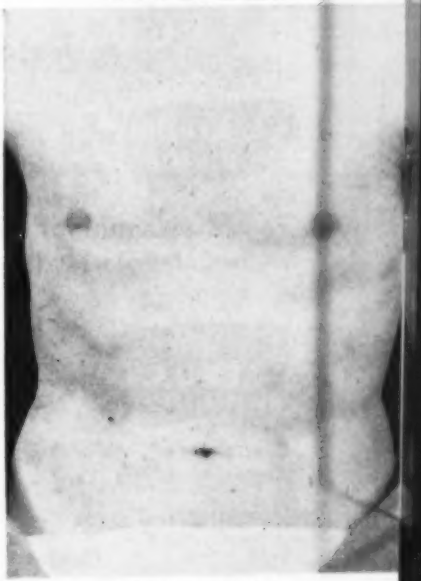

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MODERN THERAPEUTICS

Effect of Derivatives of Isonicotic Acid on Experimental Tuberculosis

Rimifon (isonicotinic acid hydrazide) (R), Marsilid (isonicotinic acid 2-isopropylhydrazide) (M), nicotinaldehyde semicarbazone (N), or isonicotinaldehyde semicarbazone (I) in daily doses of 250 mg. per Kg. or streptomycin (S) in daily doses of 150 mg. per Kg. were administered to groups of adult albino mice which had been infected with *Mycobacterium tuberculosis hominis*. Treatment continued for 21 days. If 1, 2, and 3 is used to indicate 15-40, 40-70, and 70-100 per cent, respectively, of gross pulmonary involvement, the average extent of gross pulmonary lesions after an additional 21 days was 0.24 for R; 0.22 for M; 1.94 for N; 1.5 for I; 2.75 for S, and 2.83 for controls. According to Grunberg and Schnitzer in *Yale J. Biol. Med.* [*24*:359 (1952)], the ratio of the number of negative cultures of the lungs to the number of animals cultured was 28 of 28 for R; 15 of 18 for M; 3 of 13 for N; 3 of 8 for I; 9 of 20 for S, and 0 of 9 for the controls.

In another series of tests, the glucosyl derivative of isonicotinic acid hydrazide compared very well with isonicotinic acid hydrazide acid itself. Nicotinamide produced no appreciable benefit over untreated controls.

Rubber Tubing as a Cause of Infusion Thrombophlebitis

Rubber tubing was found to be a cause of thrombophlebitis in a study reported by Handfield-Jones and Lewis in *The*

—Continued on page 70a

MODERN THERAPEUTICS

—Continued from page 68a

Lancet [*262*:585 (1952)]. They found that a particular type of new red rubber tubing gave a thrombophlebitis rate of 44 per cent. Special vulcanizing of the red tubing or the use of latex rubber markedly reduced the rate. These results were obtained using the same solutions through the different tubing. The authors also pointed out that other factors may contribute to thrombophlebitis since it was found that prolonged infusions of solutions having a low pH, such as glucose and saline, produced a higher incidence than when blood was transfused.

Pulmonary Function in Patients Convalescing from Acute Poliomyelitis with Respiratory Paralysis

Autopsy examination had demonstrated acute pulmonary emphysema, pulmonary edema and often atelectasis and pneumonitis in patients dying of acute poliomyelitis. Lukas and Plum writing in *The Am. J. of Med.* [*12*:388(1952)] report usually such patients have been in mechanical respirators for several hours before death, and almost invariably they have suffered at least brief periods of asphyxia. Whether the abnormalities found in the lungs are caused by the mechanical respirators or by poliomyelitis *per se* has not been ascertained.

A study was undertaken to delineate patterns of pulmonary function associated with respiratory paralysis following acute poliomyelitis and to determine whether artificial respiration or other factors produced physiologically significant intrapulmonary changes in these patients.

The results are as follows:

1. Pulmonary function studies were performed in 12 patients convalescing from acute poliomyelitis with varying degrees of

—Continued on page 74a

"All would live long, but none would be old"

Benjamin Franklin

Fear of declining health all too frequently offsets the natural desire to live to a "ripe old age." Vital efficiency after fifty may be adversely influenced by improper adjustment of the body economy to the decline in sex hormone activity, as well as by nutritional inadequacy and emotional instability. "Mediatric" Capsules — combining steroids, nutritional supplements and a mild antidepressant — have been specially formulated to counter this problem by helping to prevent the premature onset of degenerative changes.

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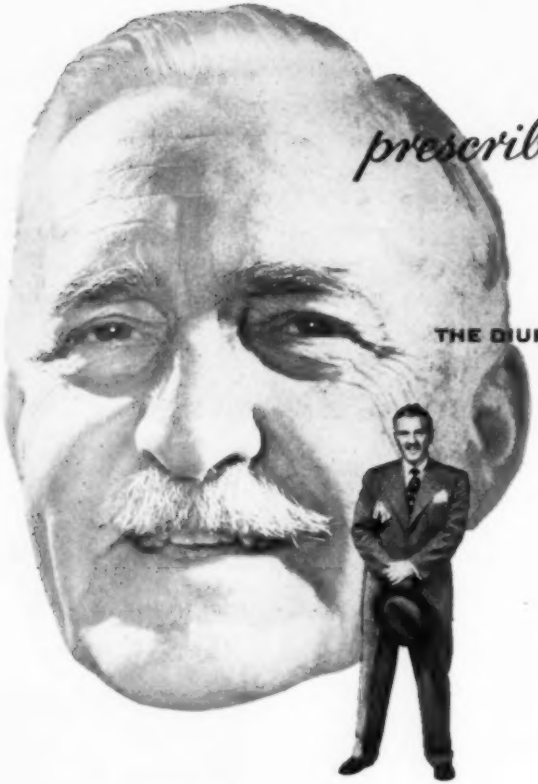

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packaging Bottles of 50 tablets. There are 18.3 mg. of 3-chloromercuri-2-methoxy-propylurea in each tablet.

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—Continued from page 70a

respiratory paralysis.

2. Lung volume analysis revealed reduction of vital capacity in all but one instance. Residual volume was increased from 125 to 280 per cent in all but two subjects. The expiratory reserve volume was decreased by an average of 540 cc. The increased residual volumes were associated with paralysis of muscles effecting forced expiration and did not represent structural emphysema.

3. Maximum breathing capacity was below normal but in general was relatively better preserved than vital capacity, with which it correlated poorly.

4. The pattern of mixing and diffusion of gases in the lungs was normal, but alveolar ventilation was inadequate in five of the moderately and severely paralyzed patients, as indicated by low oxygen and elevated carbon dioxide tensions in the alveoli and the arterial blood.

5. There was no evidence that poliomyelitis *per se* or mechanical respirators acting on a cyclic negative pressure principle produced any physiologically significant intrapulmonary defects.

6. The state of the respiratory musculature of every patient recovering from poliomyelitis should be determined because slight but important degrees of paralysis may not be recognized. Fluoroscopy of the chest and vital capacity are simple and reliable methods for this evaluation.

New Antimalarial

Daraprim (5-(p-chlorophenyl)-2, 4-diamino-6-ethylpyrimidine) was given to 18 infants, 7 older children, and 4 adults infected with *Plasmodium falciparum* and to 3 children with *P. malariae*. The dosage

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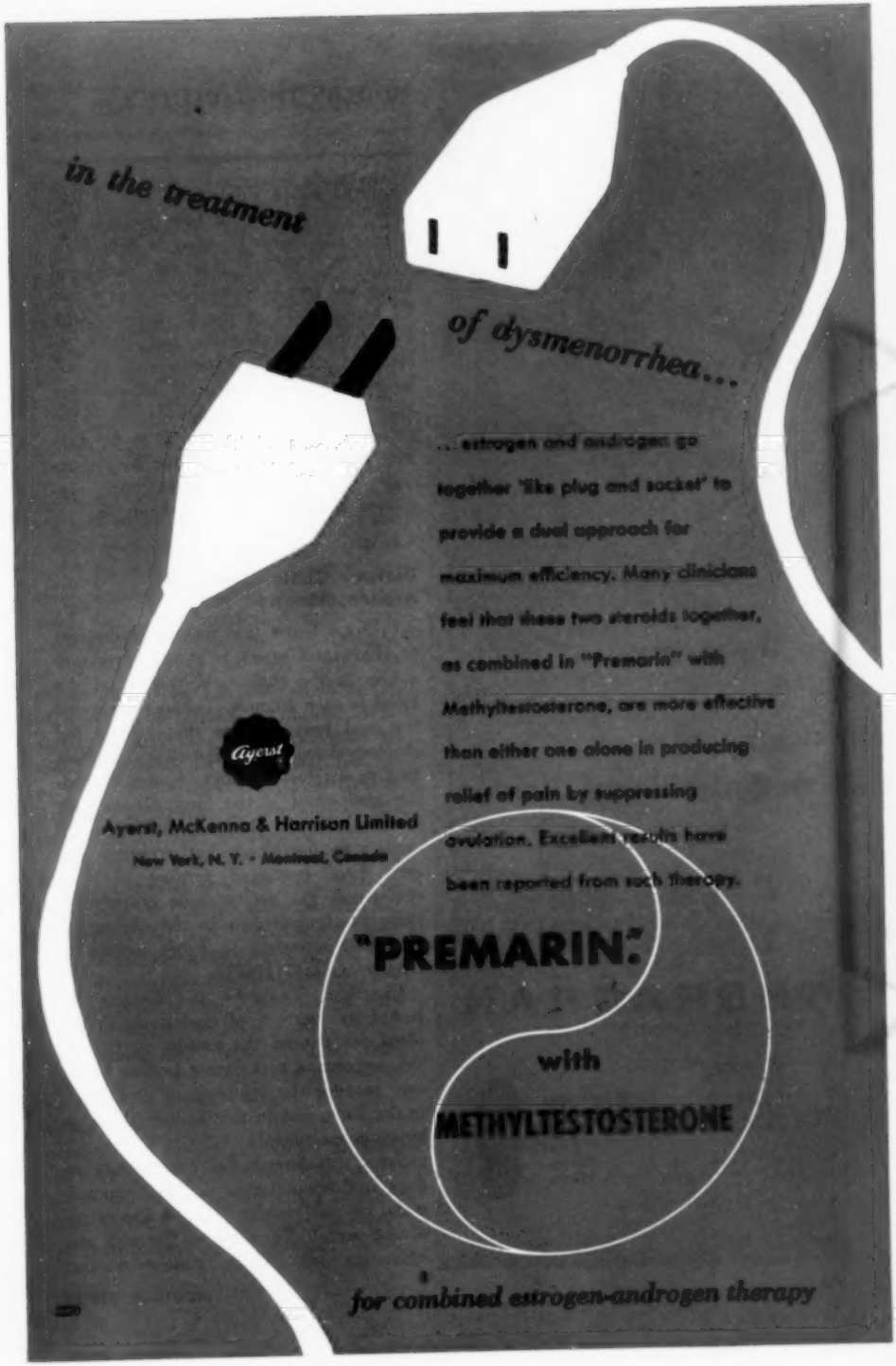
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MODERN THERAPEUTICS

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employed was a single oral dose of 0.25 or 0.5 mg. per Kg. of body weight. McGregor and Smith reported in *Brit. Med. J.* [*1*:730 (1952)] that the peripheral blood was free of asexual parasites within 72 hours in 27 of the 29 patients with *P. falciparum* infections, and within 96 hours in all of the patients with *P. mălariae* infections. No toxic effects were observed in any of the patients. Six of the patients returned in from 37 to 60 days with parasites in the blood, but the authors stated that the indications were more suggestive of reinfection than of relapse.

Dietary Cholesterol and Atherosclerosis

Pribram found that feeding cholesterol or cholesterol esters to rabbits produced a rise in the cholesterol content of the blood in such animals. Lehman confirmed this and reported also that rabbits fed cholesterol exhibited hypercholesterolemia in a relatively few hours. Skokoloff feeding cholesterol in the form of egg yolk dissolved in oil, obtained cholesterol increases in the blood, but reported that even long continued feeding of such cholesterol did not produce correspondingly larger increases in the cholesterol elevation, according to Tuttle writing in *Geriatrics* [7:37(1952)].

Chauffard, Larouche and Grigaut reported an increase of cholesterol in the blood far beyond the amount in the fat fed, suggesting that excess feeding of fat can produce the synthesis of cholesterol in the body, and in that fashion, leads to hypercholesterolemia.

Sano transferred the experiments to dogs and demonstrated that in these animals, fat was required for the absorption of cholesterol. The work of Himwich and associates led to the conclusion that

cholesterol aids in the absorption of fatty acids. They found that there was a great increase of total fatty acids, a moderate increase of lipid phosphorus and a marked rise in both free and esterified cholesterol in the thoracic lymph after the ingestion of considerable fat. The cholesterol rose from 190 mg. per cent to 629. In connection with the need for fat in the absorption of cholesterol, Schantz, Elvehjem and Hart demonstrated that rats fed galactose without fat excreted a large amount of it, and that the addition of fat to the diet abolished the losses. Butyric and caproic acids were not effective in altering the excretion, but higher fatty acids were.

Wacker and Hueck produced hypercholesterolemia in rabbits easily by feeding cholesterol, but failed to do so in the case of dogs and cats. However, Grigaut and L'Huillier were able to obtain hypercholesterolemia in dogs by feeding cholesterol. Both omnivorous and carnivorous animals show lipemia after the ingestion of fat, but they do not form deposits of anisotropic lipids, like cholesterol esters, as freely as do rabbits. Obviously, herbivorous animals are not accustomed to much cholesterol in their blood and apparently do not have a good mechanism for either absorption or excretion of this steroid as carnivorous animals have.

From animal experimentation, it seems safe to conclude that the absorption of cholesterol requires at least two factors: the presence of bile salts, without which there is no absorption (this means that the liver must be functioning normally) and the simultaneous absorption of fatty acids, without which there is little cholesterol absorption. Sterols, other than cholesterol, do not seem to be utilized by the animal, or if they are, only with greatest difficulty.

Our knowledge of cholesterol metabolism in man is incomplete. Bloor states that in man there is ordinarily a negative balance of 0.3 grams per day, probably representing the daily synthesis. Kauf-

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man and Muhlbock showed that in pregnancy, despite hypercholesterolemia and requirements of the fetus, there is always more cholesterol excreted than is ingested, indicating considerable synthesis of cholesterol in the human. Everett points out that the digestive tract of man absorbs normally about two-thirds of the total daily cholesterol, whereas more than 90 per cent of the phytosterols are lost through the feces.

This evidence is sufficient to suggest that part of the cholesterol found in the human economy is synthesized from appropriate material and a much larger part is absorbed from the diet. Further, there is a congenital inability to excrete cholesterol, as pointed out by Schoenheimer and others. They stress the hereditary nature of hypercholesterolemia characteristic of xanthamatosis, the cutaneous lesion involved.

There is, however, a large scale and long enduring demonstration that a relation exists between the nature and the amount of lipids ingested and the presence of hypercholesterolemia and certain disease, like atherosclerosis, associated with it. Anyone with medical experience in China recognizes the validity of Snapper's comment concerning the rarity of arteriosclerosis in Northern China. This condition, he believes, may be explained on a basis of diet: "Quantitative and qualitative differences exist between the lipoid content of the Chinese and foreign diets. The Chinese diets contain only small amounts of cholesterol, but considerable quantities of unsaturated acids, especially of linoleic and linolenic."

An informative study was made of a family of five Chinese siblings. All five were born in China, but three came to the United States at an early age. Nothing

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MODERN THERAPEUTICS

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is known of the early medical history of the group. The three who came to the United States developed hypercholesterolemia. One of the three was lost to the study, but the two remaining developed precordial pain and true anginal syndrome. The diagnosis of coronary atherosclerosis suggested itself and was confirmed clinically and after death, by autopsy. The siblings that remained in China were alive and well.

Besides the sterol content of the foodstuff or tissue, it is also important to consider the quantity of the substance ingested per usual portion. Milk is seemingly low in steroid content, but the consumption of considerable milk makes for a larger overall intake of the sterol.

It is advisable to begin with the strictest sterol free diet, which means the avoidance of all dairy products, hydrogenated fats, glandular tissues and fatty fish such as mackerel. In the beginning, only lean meats should be provided as a source of biologically adequate protein, and these should be supplemented with an abundance of vegetables prepared free from oils and fats. Protein hydrolysates may be used advantageously where a meat substitute is desired.

The only permissible oils are soybean, hemp seed and sunflower seed in moderate amounts. Hydrogenated fats and shortenings used as a fat source and pastries containing these are best eliminated.

Methods to increase cellular oxidation are: (1) Desaturation of fats in the liver. (2) Cortisone. (3) Oxidation. (4) Vitamin requirements.

In conclusion, clinically, attention to the diet, thyroid therapy, properly combined B vitamins and unsaturated fat accomplishes these desirable results:
(1) Hypercholesterolemia is reduced to

—Continued on page 82a

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HOSPITAL STAFF AND OFFICE MANUAL

by T. M. Larkowski,† Professor of Clinical Surgery, Stritch School of Medicine, Loyola University, Chicago, Ill., and A. R. Rosanova, Clinical Instructor, University of Illinois Medical School, Chicago, Ill.

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MODERN THERAPEUTICS

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normal levels.

(2) Conditions associated with hypercholesterolemia, especially coronary atherosclerosis, improve subjectively and objectively.

(3) Those with a tendency to rheumatoid arthritis are often greatly benefited.

(4) A study of the low incidence of coronary atherosclerosis in North China gives strong evidence that a significant portion of the hypercholesterolemic syndrome is derived from the diet.

Use of Ascorbic Acid in Experimental Fluoride Poisoning

The administration of 20 mg. of ascorbic acid per day to monkeys given 10 mg. of sodium fluoride per Kg. per day for 6 months prevented fluorosis of the bones. The diet was otherwise normal. The same dosage of ascorbic acid also restored freedom of body movement and postponed death in monkeys that had received the same amount of sodium fluoride but that had been on a vitamin C deficient diet. Reporting in *Indian Med. Gaz.* [87:3 (1952)], Wadhwani also stated that monkeys with a severe bone fluorosis that had not improved after the discontinuation of the fluoride showed higher nitrogen and lower calcium and phosphorus bone levels and an increased appetite after 10 days administration of 20 mg. per Kg. of ascorbic acid per day.

The Effect of Hexachlorophene Soap on the Bacterial Flora of the Hands

A toilet soap containing 2 per cent hexachlorophene (G-11) was studied for its effect on the bacterial flora of the hands following a standardized washing technique and a scrubbing technique. The 20

subjects were also divided into groups according to their occupation, as office workers, light workers and heavy workers.

The light workers, including food handlers, medical and surgical staff members, nurses, etc., showed the greatest reduction, a reduction in the average bacterial count of 69 per cent following washing and 61 per cent following scrubbing. Heavy workers, those contaminated with soil and such materials, showed a reduction of 55 per cent after washing, but only 15 per cent after scrubbing. Office workers showed a reduction of 23 per cent after washing. The authors concluded that among workers in light occupations, washing was as effective as scrubbing in the reduction of bacterial flora. The differences among different types of workers was interesting, but no attempt was made by Lawrie and Jones, writing in *Pharm. J.* [*168*:288 (1952)], to explain the differences.

Cortisone and Gold Therapy in Chronic Rheumatoid Arthritis

Various gold compounds were administered at the rate of 50 mg. intravenously or intramuscularly at weekly intervals until 1.0 Gm. of gold had been given. Then the interval was extended to 10-, 14-, 21- and 30-day intervals. Cortisone was administered intramuscularly in 100 mg. doses at the rate of 3 times a day for 1, 2 times a day for 1, and then once a day for 21 days. According to Thompson and Rowe in *Ann. Internal Med.* [*36*:992 (1952)], complete remission occurred in 17 of 42 given gold alone, 5 of 13 given gold and Cortisone concurrently, 6 of 29 given cortisone alone, and in 0 of 8 given gold first and then cortisone later.

NEWS AND NOTES

New Research Program Established in Medicinal Chemistry at Mellon Institute

Parke, Davis & Company, Detroit, Mich., is the donor of a new Multiple Fellowship at Mellon Institute, Pittsburgh, Pa. This Fellowship will carry on long-range investigations in synthetic organic chemistry, with general emphasis on chemotherapy and particular emphasis on the preparation of compounds for combating viruses and tumors.

The Fellowship, which was started on July 15, is headed by Dr. Alexander M. Moore, Administrative Fellow, since 1946 a Parke Davis specialist in the synthesis ot potential drugs and in the classification of organic compounds. On his staff are three Senior Fellows: Drs. Robert S. Tipson, Alice G. Renfrew and Marcus S. Morgan. Pauline C. Piatt is a Fellow, and in the relatively near future several other scientists and assistants will be added to the group. A wide field is open to the Fellowship for productive work in collaboration with Parke, Davis & Company and its strong research organization.

Dr. Moore received his B.S. at the College of Charleston in 1938 and his Ph.D. in organic chemistry at the Johns Hopkins University in 1942. He was a research chemist for the Socony-Vacuum Oil Co. from 1942 to 1944, and then during the period 1944-46 he participated in a survey of antimalarial drugs that was conducted in Baltimore. At the close of that investigation, he joined Parke, Davis & Company, where he rose to his most recent position of laboratory director in organic chemistry. During World War II he was with the

Office of Scientific Research and Development. Early in his professional career Dr. Moore carried out researches pertaining to lubricating oil additives and chemicals from petroleum. With Parke, Davis & Company his investigational activities related to organic synthesis and mainly to the preparation of drugs of likely value.

Dr. Tipson received his professional education at the University of Birmingham in England (B.Sc., 1926; Priestley scholar, 1927-28; Ph.D., 1932; D.Sc., 1945). He was an instructor in chemistry at Birmingham in 1928-29, a fellow at McGill University, 1929-30, an assistant and then associate fellow at Rockefeller Institute, 1930-39. In 1939 he joined the research staff of Mellon Institute, being first a Fellow and since 1945 a Senior Fellow. He is a specialist in the chemistry of sugars, nucleic acids, cinchona alkaloids, antimalarial drugs, and glycols. Dr. Renfrew has been with Mellon Institute since 1931. She was educated at Mt. Holyoke College (A.B., 1921; A.M., 1923) and at Yale University (Ph.D., 1927). She held a National Tuberculosis Association Fellowship at Yale, 1926-31. Her published investigations have related to the structure of plant gums, biological and hydantoin chemistry, tubercle bacillus, quinine derivatives, heterocyclic compounds, and pteridines. Dr. Moran is an alumnus of the University of Pittsburgh (B.S., 1935; Ph.D., 1943). He was a Fellow in Mellon Institute, engaged in studies on commodity standards, 1935-42. After a year of research in the textile industry he returned to the Institute where he has been a Fellow continuously since 1943. He has been a lecturer in the department of chemistry at the University of Pittsburgh since 1946. Like Drs. Tipson and Renfrew, he has had wide experience in organic synthesis in the Department of Research in Organic Chemistry at Mellon Institute, and his principal studies have

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NEWS AND NOTES

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been in chemotherapy, antimalarials, and kinetics of organic reactions. He took part in the survey of antimalarials conducted by the Office of Scientific Research and Development. Pauline Piatt began work at Mellon Institute in 1947, following her graduation at Waynesburg College. She was awarded the degree of M.S. at the University of Pittsburgh in 1951. She has had broad training in synthetic organic chemistry, particularly in its relations with chemotherapy. Many of her recent activities have pertained to the chemical properties of pteridine derivatives.

Surgery in Older Persons Can be Relatively Safe

Operative risks among the aged are probably generally overestimated, while what can be done to and for the patient is underestimated, it was stated in the current *Archives of Surgery*, published by the A.M.A.

This opinion was expressed by Drs. Chester A. Haug and W. Andrew Dale, and was based on an analysis of a consecutive series of 354 major operations in 313 patients beyond the age of 60 years over a year's period. The doctors made the study while both were associated with the department of surgery, University of Rochester School of Medicine and Dentistry, Rochester, N. Y. Dr. Dale is now associated with the Medical College of the University of Alabama, Birmingham.

The study revealed an over-all operative mortality of 9.0 per cent, with an over-all patient mortality rate of 10.2 per cent. Emergency operations proved to be more dangerous to older patients. The survey disclosed a mortality rate of 21.9 per cent for emergency operations, as compared with a 5.7 per cent death rate for elective operations.

"Further analysis of the deaths shows

that if patients already doomed by the disease process involved are excluded, the adjusted death rate would be considerably lower, indicating how well operations are tolerated by patients in this age group," the doctors pointed out.

Drug May Deter Chronic Alcoholics

Disulfiram (antabuse, trade mark) may become established as a useful adjunct in the management of selected and adequately supervised cases of chronic alcoholism, it was stated in a report by the Council on Pharmacy and Chemistry of the *A.M.A.*

Disulfiram serves primarily as a sobering crutch on which the alcoholic may lean while a sincere effort is made to remove the underlying desire for alcoholic intoxication, it added. The effectiveness of disulfiram as a deterrent to drinking lies in creating fear of a reaction, not in the development of actual aversion to alcoholic beverages.

"The employment of disulfiram in the management of chronic alcoholism requires the consent and full knowledge of the patient coupled with the application of psychotherapeutic measures designed to rehabilitate the patient," according to the report.

The drug, introduced from Denmark, produces highly unpleasant reactions when taken prior to ingestion of alcoholic beverages. The reactions include flushing, sweating, palpitations, labored breathing, accelerated pulse rate, fall in blood pressure, nausea, and ultimately vomiting. Symptoms usually begin within five to

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15 minutes after ingestion of alcohol and end in about an hour; in severe cases they may last, however, for several hours, or as long as there is alcohol in the blood. The drug should not be administered for at least 24 hours after the patient has consumed alcohol.

Although there have been no deaths reported which are attributable to the drug alone, extreme caution should be exercised in its use, the report pointed out. Some patients receiving the drug have complained of mild drowsiness, fatigability, impotence and headache. Some cases of neurologic changes have been observed, it added, but these side-effects have been controlled by reduction in the dosage.

"Physicians should warn the patient against drinking during treatment and instruct relatives concerning the danger of secret administration of the drug because of the consequences of overdosage or the exaggerated effect of the drug in the presence of intoxication," the report stressed.

"It also has been suggested that every patient under treatment should carry an identification card to that effect, indicating the symptoms most likely to occur following consumption of alcohol, together with the name of the physician or institution to be called is case of emergency."

Clinical Congress of American College of Surgeons to be Held

Surgeons from all parts of the nation and a number of foreign countries will participate in the 38th annual Clinical Congress of the American College of Surgeons which opens at the Waldorf-Astoria in New York City September 22 and continues through September 26. Attendance at this largest scientific meeting of its kind in the world is expected to reach 10,000.

Recent developments in surgical and clinical techniques will be discussed in

hundreds of reports by leading surgeons at this five-day educational meeting. The program includes clinics, postgraduate courses, forums, panel discussions, color television, ciné clinics, medical motion pictures and scientific and technical exhibits.

An extensive program of operative clinics and demonstrations in which sixty-two hospitals in the New York area are participating, will be an important feature during the week. Presbyterian Hospital has been selected as the source of telecasts of surgical procedures for the color television program to be shown at the Hotel Belmont-Plaza. Ciné clinics, or film-lectures of surgical procedures narrated by the operating surgeons, are now being filmed for presentation during the Congress. Medical motion pictures showing significant surgical steps in detail will also be shown.

Twelve sessions of the Forum on Fundamental Surgical Problems are planned, at which brief reports of original clinical and experimental observations relating to the broad aspects of general surgery and the surgical specialties will be presented. Among the other sessions will be symposia on cancer, trauma and graduate training, panel discussions on general surgery, gynecology and obstetrics, surgical specialties, ophthalmology and otolaryngology.

Ultracentrifuge—New Instrument for Blood Study

The ultracentrifuge, a new instrument recently introduced into medical science, was officially put into use June 18 at Beth-El Hospital, Brooklyn, N. Y., to study blood constituents in cardio-vascular diseases, arteriosclorosis and other diseases such as diabetes, nephrosis and thyroid conditions. It is the first time the machine was used in the metropolitan area for long term studies in clinical medicine. Its expected value will allow detection of cardio-vascular diseases which are the major

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cause of death in the Western World, sooner than the currently used clinical tools such as chemical laboratory tests and diverse electrical instruments.

The ultracentrifuge is a major feature of the new atherosclerosis research laboratory donated and equipped by the Abe and Gertrude Messinger Foundation, which was established to further medical investigation of human illnesses. The direction of the laboratory is under Dr. I. J. Greenblatt and its associate director is Dr. Theodore D. Cohn.

Through the use of the ultracentrifuge, valued at $20,000, research experts are able to take blood serum from a patient and calculate abnormal substances within the blood based upon photographic patterns made by the blood serum. This technique of measuring blood elements was introduced recently by Dr. J. W. Gofman of the Radiation Laboratories, University of California. The instrument spins blood serum in a vacuum at 60,000 revolutions per minute and photographs the separation of abnormal substances in the blood.

The basis for the evaluation of the diseases is the ability of the ultra-centrifuge to measure the content of the fat-protein complexes of the human blood serum. Tests have indicated that abnormal quantities of fat-protein complexes are invariably associated with cardio-vascular diseases and arteriosclorosis, diabetes, nephrosis and thyroid conditions.

Evidence points to the fact that this instrument will serve as a diagnostic weapon, indicating if patients are suffering from any of these diseases and may also demonstrate the degree of degenerative change taking place. Research will also determine whether the ultracentrifuge can be used as a prognostic test determining by the present condition of the blood if there is a tendency toward these diseases.

Warn of Dangers from Misuse of Insecticide

Effective pesticides must have deadly qualities if there is to be progress in man's war against insects. However, such chemicals must be used properly and with precautions against human consumption if tragedies are to be avoided, it was stressed in two articles in a recent *Journal of the A. M. A.*

Both articles dealt with the pesticide toxaphene, a chlorinated camphene compound which has been shown to be effective against a variety of agricultural and livestock insect pests. One article, written by the committee on pesticides of the A.M.A., stated toxaphene sprays are not

considered to be safe for household application. The other article was prepared by Drs. Lemuel C. McGee, Howard L. Reed and James P. Fleming. Drs. McGee and Reed are of Wilmington, Del., and Dr. Fleming of Hearne, Texas.

The absence of poisoning in workers who manufacture toxaphene and in those who are exposed to it, both in the compounding of pesticides and in its use in agriculture, suggests that it can be handled with safety, the articles pointed out. However, they reported, accidental use, careless misuse, or injudicious use of the pesticide has resulted in several deaths and numerous cases of poisoning.

Toxaphene causes diffuse stimulation of the brain and spinal cord, resulting in generalized convulsions, according to the articles. Death results from respiratory failure after a series of convulsions of increasing severity. The treatment of toxaphene poisoning is directed toward the evacuation of the stomach and bowels and the control of convulsions and other central nervous system manifestations.

Removal of Part of Stomach in Ulcer Cases Safer and More Effective

Removal of part of the stomach today is a safer and much more effective method of treatment in cases of gastric, gastrojejunal and duodenal ulcers than it was a generation ago, in the opinion of five Chicago doctors.

The doctors base their conclusions on a study of 1,796 nonselected ulcer victims so treated over a period of 33 years. A follow-up in 1,200 of the cases revealed that 95 per cent of the patients were well, on a full diet without medicine, had a normal blood picture and showed an increase of weight from 15 to 50 pounds.

The doctors divided the cases studied into two groups—950 patients treated between 1917 and 1938, and 846 treated between 1938 and 1950. The mortality of the former group was 33 (3.5 per cent), as compared to 12 (1.4 per cent) of the latter group.

"The use of spinal anesthesia in conjunction with chemotherapy and the antibiotic drugs, we believe, explains the difference in the mortality of the groups, since it has so effectively reduced the incidence of fatal pulmonary complications," they wrote in a recent *Journal of the A. M. A.*

"All this should be ample proof that this operation, although a major surgical procedure, justifies itself."

World Medical Association to Meet

The Sixth General Assembly of The World Medical Association will meet in Athens, Greece, October 12-16, 1952.

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1. Hyman, H. T.: An Integrated Practice of Medicine, Vol. IV, W. B. Saunders, Philadelphia, Pa., 1947, p. 3836.
2. Goodman, L. and Gilman, A.: The Pharmacological Basis of Therapeutics, The Macmillan Company, New York City, 1941, p. 176.